American Anthropologist

NEW SERIES

VOL. 10 APRIL–JUNE, 1908 No. 2

MIND AND MATTER IN CULTURE

BY OTIS T. MASON

The word culture here applies to all the artificialities of human life. It is the history of man recorded in the works of his hands. Culture-history is the story of this wonderful progress as written in what remains of the record of the past in two depositories — archeological relics, and the survivals of ancient activities in the hands of savages and the backward among civilized peoples. This progress has been an appropriation of all the material of which the earth is composed and the domination of the forces of nature for the help of man. It is the second of the two grand divisions of Anthropology, namely — Physical Anthropology and Cultural Anthropology, or Eurematics.

INVENTION. — Forget for the moment that there is any biological kinship between mankind and animals, in order to fix the mind on the word "invention."

It is not necessary to confine oneself to patent offices and letters patent, for children invent as soon as they walk. Men and women of all races and conditions, in all ages, were engaged in devising. In this respect, there has been an unbroken kinship of minds, savage and civilized, from first to last. The animals construct habitations, store food, and use wonderful contrivances. They have seen the dawn of culture-history; but their tools and apparatus are so admirably provided in their anatomy that their minds are not fully awakened. The "cunning little creature called man" would seem to have been deprived of wings, fleet feet, horns, claws, and fangs, and endowed with a corresponding quantity and intricacy of brain.

AM. ANTH., N. S., 10–13.

WANTS. — At the foundation of infinite invention lie the words "wants," "desires," sharply distinguished from the word "needs." The former are the artificializing of the latter. The occupations called humanities have resulted, and tracing their origin is the climax of culture-history.

The artificializing of needs into wants and desires has developed into six general directions and produced an equal number of groups or classes of activities based on the nature of man:

1. *Language*, the expression of thought, giving rise to the sciences of glossology, philology.

The moment an infant is self-conscious, it proceeds to indicate its wants and feelings. It receives encouragement at every step, and the result is the mature language of gesture, voice, symbol, pen, press, terminating in endless patents for giving out and recording thought.

2. *Industries*, to supply wants, giving rise to the science of technology, in the widest sense of the term. It includes all artificialized activities to supply demands for aliment, clothing, shelter, and getting about, together with the endless list of implements, tools, utensils, machines, and conveniences without which we come to think that we cannot live, and whose practice is industrialism.

3. *Esthetic arts*, to give and foster pleasure. They include all artificial activities whose end is gratification. The senses are the doorways, and when their satisfaction is for its own sake, the fine arts are the results. But eating, drinking, perfume, bathing, and play, among the lowest as among the highest, have consumed much time and thought. The science of fine art is esthetology. Culture-history investigates and illustrates the origin of the arts beautiful, their progress and climaxes.

4. *Social activities* of all kinds, for reproduction or culture, giving rise to the family life, the industrial life, the civic and national life, and all sorts of unions or associations for welfare or pleasure. The special science is sociology. In the lower culture-states and culture-periods it is more observant of clans, gentes, tribes, and totems. In the higher culture, nations are the political units and all activities are organized.

5. *Knowledge and the explanation of things*, whose science is

sophiology. In it are included the lore of the uneducated and of primitive culture, as well as science, history, and philosophy of the civilized. All peoples are sure that they understand and can explain all phenomena, and the historic instinct is universal.

6. *Creeds and cults*, the last activities and thoughts and things to be mentioned grew out of beliefs and practices in relation to a spirit world. The term religion in its widest sense covers this whole class of phenomena, including organization of society for its regulation and all its operations and worships. The words daimonology and hierology apply to its culture-history.

MUTUAL SERVICE OF ACTIVITIES. — No class of activities exists for itself alone. There are actions in each, no doubt, which end in the performance; but there are very many more that are altruistic, cosmopolitan — performed by one class for the benefit or to supply the wants of other classes. Cicero, in his Oration for Archias, hits off my thought exactly: "For all the arts belonging to humanity (culture) have a kind of common bond, and among themselves are associated by a species of fellowship." We are to study the socials in culture as well as its solos.

Language lives for industries, esthetic arts, social demands, knowledge, and religion. It might be said that they all exist for it to talk about.

Industries thrive on language, fine art, society, science, and religion.

Esthetics changes speech into poetry, rhetoric, and the drama; overlays industry with beauty; mingles the *utile cum dulce* in social activities; develops thought in art and studies its philosophy; and lays its climaxes at the feet of the spirit world.

Association lies at the basis of all culture. No man and no art liveth for self or dieth for self. There must be speaker and hearer in language; subjective and objective in art and industry; cooperation in thought and science; and clergy and laity in religion.

Knowledge and *Science* demand the best that language can offer and stimulate its expansion and perfection; claim all industries as their own; guess at the secrets of Nature and reveal them to the inventor; put at the service of fine art the rules of number, proportion, and harmony; preserve the records of social order, census,

commerce, and exchange; point out their own faults and dangers and assign methods for their betterment; and give to conceptions of the spirit world the true order of nature and a rational basis for creeds and cults.

Religion brings to language its most exalted themes, to industries its promises and consolations, to art its highest inspirations, to social organizations their rules of conduct, and to the search for knowledge its all-absorbing problems.

Here one set of motives or one person is in the lead and others follow suit; but in another class or time, the tables are turned—the leader is subordinated, the slave is master, the humble is exalted. There is little chance for great physical differences in this diversification of functions.

This hasty survey is only a sketch of the simplest binary associations among the six classes of activities and, as culture advances, the mixtures become more and more complex, until all are found in the service of each. In the ethnological exhibits of the National Museum, the family life, the village life, and the ceremonial life are shown in groups of lay figures, the industrial and the esthetic life in groups and in series of objects, and the language, lore, and religious creeds are exhibited in literature. The photograph lends aid to all. There is no time here to follow up this fascinating study. The more profoundly one becomes absorbed in his special pursuit, the more will he look on all culture as belonging to his sphere of thought.

The Physical Basis of Culture. — Culture has had to do from first to last with the physical universe for its resources, environments, and forces, chiefly in the earth, the waters, and the air; but in the cosmos also are they stored up, and out of these have arisen all the artificialities of human life. Speech is only waves of air; industries arise out of subservient matter and motion; esthetics goes to Nature for its materials and methods; society is based on instincts vastly older than man; thoughts, opinions, lore, knowledge, science, philosophy, wisdom — all grow and are made possible by the reign of law; and Nature gives form and function to religion.

But in order to keep the notion of culture through invention in the foreground, it is necessary to insist on Nature's second rank. She is servant and not master. She it is whose properties and qual-

ities give out first. It is the glass and not the mind that first fails in astronomy; the bolometer owes its fatigue and exhaustion to the manufacturer of steel, not to the physicist. Everywhere, at the end of the promising vistas of Nature there are sealed doors and barred gates.

The advancing minds and races took possession of the earth, not merely to accept the bounty offhand, like the animals, but to explore, secure, domesticate, or destroy its resources; to manufacture and reconstruct them; to move them and themselves artificially; to exchange, measure, and value them; to consume and enjoy them. The order of Nature seems to have been reversed, invention beginning with zoötechny and passing upward through plant culture and lithotechny to the mastery of forces.

To bring the resources of Nature into service and to accomplish these results just set forth, human brain and brawn would have been inadequate.

The harnessing and training of movements in Nature known as forces — muscle, gravity, wind, water, fire, chemism, and electricity were necessary. The gradual achievement of this marked the epochs in human progress —

1. Man power — hand epoch, manual skill.
2. Fire power — epoch of human mastery and metallurgy.
3. Beast power — epoch of domestication.
4. Wind power — epoch of the sail, navigation.
5. Water power — epoch of gravity.
6. Steam power — epoch of machinery.
7. Chemical power — epoch of scientific manufacture.
8. Electric power — epoch of climactic invention in speech, light, heat, and locomotion.

The utilization has been cumulative, so that a power house is a kind of House that Jack Built.

How to substitute the forces in the environment for the working of the hand has been the problem of the engineer and the machinist in all ages. The devices between the force and the effect have been —

Devices	*Effects*
1. Weights 2. Springs	Motion, pressure, blows.

3. Inclined plane	Reduced weight and resistance.
4. Wedge	Riving and tightening.
5. Sled	Reducing friction.
6. Roller	Changes and destroys friction.
7. Wheel	Combines 5 and 6.
8. Wheel and axle (cog and band)	Multiply power and change its direction.
9. Pulleys	

10. Twisting, shrinking, and clamping devices.
11. The screw in holding, clamping, and motion.

In putting this series into activity, differentiated tools were developed; working alone or in combination —

1. For striking, either alone or with other results.
2. For rectilinear or curvilinear motions.
3. For breaking in pieces, grinding.
4. For battering surfaces.
5. For chipping silicious, fragile materials.
6. For abrading by friction.
7. For polishing surfaces.
8. For cutting with an edge.
9. For sawing, with or without sand.
10. For perforating.
11. For holding together.
12. For twisting textile substances.

The working part of the tool has maintained a steadfast plan of functioning, but the changes of the manual part have constituted the history of machinery.

CHANGES PRODUCED THROUGH INVENTIONS. — The modifications produced through inventions in all ages have been in many directions and each has had its effect on all divisions of culture. Vast changes have been wrought upon the earth, air, and waters, by man. His first masterpiece, fire, made awful havoc in the hands of the savage, followed by floods and malicious winds. Invention has been going on without cessation from first to now with changes.

1. In the things devised, commonly called inventions:
   - *a*. From naturism to artificialism.
   - *b*. From simplicity to complexity.
   - *c*. From clumsiness to delicacy and beauty.

d. From waste to economy.

e. From discomfort to comfort.

This declaration applies to the six divisions of culture. Language was in the childhood of our species a mass of incoherent cries; handicraft was only slight modification of things inanimate; esthetic objects were plucked from nature; society, wisdom, and worship were only in their rudiments.

2. In all the processes and apparatus involved in the production and use of inventions the earliest inventors acted alone; while in modern life the vast amount of subsidiary changes involved in an invention often demands a corps of specialists and national legislation.

3. In rewards and benefits, at first the reward accrued to the individual and stimulated others to copy; while to encourage this most precious and beneficent faculty the most enlightened nations grant exclusive patents and crown the inventor among the heroes of the species. The benefits to society have expanded and intensified with the fortunate races and peoples, until it is impossible to calculate the good that has come to the commonweal of humanity through any one of the epoch-making inventions.

4. In thought, not only of the inventor's mind, but in all who come under his influence. After the birth of his happy idea, he is no longer the same person. Old things are passed away, all things are new. Other minds are affected; the contagion spreads far and wide.

There are places where the inventor's contrivances produce no material alterations. He cannot change the heavenly bodies, but his thoughts about them have been revolutionized by his ways and means of looking at them. This mental evolution has been manifested in the very citadel of change, the inventive faculty itself. The first instrumentalities were mere borrowing, taking things ready made, and copying others for new functions — a quiet stone for a lively hammer; the houses of mollusks for dishes, spoons, tools, and musical instruments; thorns for awls, etc. The latest are out-and-out creations. The inventor does not walk abroad for suggestions; he is not surprised by the unexpected, but sits down in his laboratory, shuts his eyes, and gives the creator spirit full sway.

5. In society, the coöperative mind has been elaborated through the growing complexity of invention. Schools of fine art with their motives, legislatures in their enactments, institutions of instruction and research, are perpetuated and organized — thinkers, exploring the spheres and the spirit world for new materials, motives, and forces. The renaissance of the white subspecies of humanity is its noblest product.

THE FUTURE OF CULTURE-HISTORY. — The scientific study of culture is yet in its infancy. There is ample work to do in solving —

Development of artificiality in time.
Evolution of complexity in devisings.
Genealogical connections of inventions.
Geographic distribution of thought.
Relation of culture to environments.
Acculturation through blood kinship, accident, traveling about of peoples, and cosmic movements — including winds, currents, migrations of birds, fishes, and mammals.

1. In the changes from naturism through manganism the story will run —

From cries and gestures to perfect transmission of thought.
From natural fire to fire, the docile servant.
From woman's nimble fingers to Jacquard loom.
From personal decoration to idealized art.
From common refuge to national fortification; from herding together to organized armies.
From childish lore to cyclopedic knowledge.
From personeity in causation to organized science.
From hecastotheism to monotheism.
From simplicity to complexity.

2. The coming student of culture will study out the changes of invention —

From stone hammer to steam hammer.
From flint saw to ribbon saw.
From chipped scraper to planing mill.
From woman's back to palace train.
From skin float to ocean steamer.
From conch shell and rattle to orchestra.
From ephemeral partnership to international commerce.

From personal friendship to universal brotherhood.
From tribal life to the congress of nations.
From lonely guessing to international standards.
From tribal deity to the Infinite and Omnipresent.

3. The ways from clumsiness to delicacy will pass through the many series of progression from mere need supply to refined enjoyments, from brute force to grace, from worse to better ideals in morals. The two pillars in front of Solomon's temple were Jachin and Boaz, beauty and strength, typifying world progression upward —

From stammering cries to the great epics and dramas.
From stifling smoke to scientific heatings.
From groaning cart to Pullman car.
From gluttonous feast to refined dining.
From fig-leaf apron to ceremonial costume.
From digging stick to buggy cultivator.
From cave refuge to charming home.
From wild shouts in unison to the symphony.

4. The changes from waste to economy will include also interesting research. Our ancestors did destroy ruthlessly the bounties of Nature, and the modern forest and coal wasters have been greater than they. But the tendencies have been —

From waste to frugality.
From ancient mining to recent methods.
From camp and forest fires to steam and electric heating.
From savage roast to French cuisine.
From primitive tillage to scientific husbandry.
From Jack-at-all-trades to specialized manufacture.
From dispersive living to coöperative comfort.
From separate establishments to corporations.
From hiding the truth to knowledge in common.
From war to arbitration.

Thorough examination of culture-changes will show, in all the past, struggles for ease; and the transitions have been from discomfort to comfort. Looking backward over the progress of invention among the nations reveals such a change. New departures of activity in the conquest of a new force seem to contradict this. The

devices break down, go out, will not work, give annoyance, and are accompanied often with increased hardship. They convey discomfort, not comfort. This, however, is only transitory defeat, leading to later victories. It is a melancholy truth, however, that this change has in the past seduced nations to their decline and fall. The evolution is seen in the transfer —

From log seat to gorgeous furnishings.
From the naked ground to the feather bed.
From plodding to riding at work.
From toilsome hand work to machine work.
From open fire to electric heating.
From wandering savagery to the settled home.
From blood revenge to jury trial.
From cold indifference to organized charity.
From selfish motive to the golden rule.

From Individual to General Study. — This paper would be without a motive if it did not extend a cordial invitation to every thoughtful person to take part in deciphering records of the mind's victories written by inventions. It matters not what one's calling or favorite study may be, its materials, apparatus, and processes have a genealogy as old as the human species. Every word voiced, written, gestured, or messaged; every activity in which tools, utensils, or apparatus may be used; every artistic creation; every aggregation or congregation of human beings for a specific purpose; every suggestion for explaining phenomena, every advance in knowledge or its instrumentalities; and all beliefs and worships belong to human culture and their investigations to culture-history. Nothing common is trivial; the accumulation of well-observed facts is as important as the epoch-making invention.

U. S. National Museum,
Washington, D. C.

ETHNOGRAPHICAL PROBLEMS OF THE MISSOURI SASKATCHEWAN AREA

By CLARK WISSLER

Ethnographic research in America has made sufficient progress to warrant serious comparative studies. Such studies as have been made for California and the North Pacific coast show the substantial progress to be made by research of this kind. While it may be true that the chief concern of Anthropology in America was rightly the recording of languages and ethnological facts, the time has come when the defining of some problems by comparative study is necessary to prevent loss of data because of failure to appreciate its importance. The following paper is a brief review of problems suggested by past research in the Missouri-Saskatchewan area. Few of the suggestions can be said to be original with the writer, but to refer each and all to the sources would reduce these pages to lists of footnotes and catalogues of contributors' names. Furthermore, all serious students of American anthropology are sufficiently familiar with the literature of this area to infer the sources from which the suggestions come. We may mention, however, a recent paper by James Mooney on the Cheyenne, published by the American Anthropological Association, in which some aspects of the general problems are discussed; a paper by A. L. Kroeber, read before the Congress of Americanists, Quebec, 1906, reviewing the social organization, and at the same meeting one by the writer discussing some of the more general phases of the cultural problems pertaining to this area.

The term Missouri-Saskatchewan seems best for the area under discussion as it defines the region in map-terms. The limits of the area drained by these two rivers may not exactly agree with the accepted bounds of the ethnographic area known as the Prairie, Plains, etc., but with few exceptions include the historical habitats of the tribes among which certain aspects of culture are most pronounced. Taking its southern boundary as the Arkansas, its western

as the Great Divide, and its eastern as the Mississippi and Red rivers, we shall have the area in which the tribes concerned roamed for a part of the year at least. Furthermore, as there appears a tendency toward migration from all sides into this area, it may be regarded as the territorial objective for a large part of the inhabitants in the interior of the continent. Our knowledge of the history of this area dates from the latter part of the eighteenth century, but does not become definite until 1800. Taking the beginning of the historical period as the point of departure we find in the Missouri-Saskatchewan area groups of people belonging to Athabaskan, Algonkian, Caddoan, Kiowan, Shoshonian, and Siouan linguistic stocks. To these may be added transient groups of Sahaptian and Kutenaian.

The members of the Siouan stock resided almost entirely within the area. The main body seems to have lined the banks of the Missouri from the great bend in North Dakota to its junction with the Mississippi, with outlying groups to the northeast and to the south. There were, however, two detached groups, the Crow in the mountains of Montana and the Assiniboin of Canada. The Tetons, the Crows, and Assiniboin seem to have lived in tipis all the year and not to have practised agriculture, yet a large part of the main body, the Hidatsa, Mandan, Omaha, Missouri, Oto, etc., lived in villages of earth-covered lodges, and cultivated corn. Within the historical period the Caddoan has been one of the minor stocks of the area, better known under the names of Pawnee, Wichita, and Arikara. Of these the Pawnee and Arikara lived in the same sort of houses. It is a singular fact that the Missouri type of earth lodge is almost restricted to the above designated groups. Here is one of the many specific problems: Was this type of dwelling originated in the area and by what group? The fact that the earth lodge seems to have been used by the two most northerly groups of the Caddoan suggests strongly the Missouri River Siouan group as its originator. Archeological studies in Wisconsin and Minnesota — the traditional homes of many divisions of the Siouan group — are important for the determination of the former character of their dwellings. The solution of this problem may be of considerable importance in estimating the value of the theory that the Siouan stock migrated from

the Atlantic. In the same connection the distribution of corn culture is important. It seems possible by additional research to fix an approximate date for its introduction to the Ojibwa and other northern groups. A study of pottery is also important, for the studies of Will and Spinden suggest a similarity between the pottery found around the Great Lakes and that of the Mandan.

The Shoshonian stock seems to center on the plateaus of the west, and a recent general study of the various linguistic groups by Kroeber strengthens the assumption that the center of their dispersion was somewhere west of the Rocky mountains. The older theory is that the whole group was dispersed from a center in Montana and adjacent territory. On this theory the Comanche and Shoshoni moved out to the plains from the west, or at least from the southwest. At the opening of the historical period they are credited with ranging from Texas to the Marias river in Montana. Though at the historical period tipis were in general use, it seems that the original type of habitation was the brush shelter. The movements of these groups and their relations to the other Shoshonian peoples is a problem in itself, but insofar as the above specified groups are concerned it is one of the problems of the Missouri-Saskatchewan area.

Perhaps the most interesting problems center around the tribes speaking Algonkian languages. The Blackfoot, Cheyenne, Atsina, Arapaho, and Plains Cree are by no means unimportant tribes, but their importance here is due to the partial solution of their problems. That they migrated from the region of the Great Lakes seems certain. This is suggested by the distribution of the Algonkian family, but we have in the Plains Cree of Canada part of a distinct ethnic group adopting the culture of the area without losing connection with the whole. Furthermore, the Cheyenne have been traced back to the borders of the central Algonkian area and the approximate date of their departure for the Missouri fixed at 1700. That the Arapaho, Atsina, and Blackfeet came to their historical habitats in similar fashion is the natural assumption. The relation of the Arapaho to the Atsina in this movement is an important problem. There are not wanting suggestions that both formerly lived as one group on the lower Saskatchewan and eastward to Red river. In

fact the Arapaho are credited with traditions of having formerly resided in the Red River country and to have practised agriculture. Taking all together it seems fair to assume that the center of dispersion for the Cheyenne, Arapaho, Atsina, Blackfeet, and Plains Cree was the Red River basin. Yet notwithstanding the advanced state of our knowledge of some of these tribes, this whole assumption merely states another of the intricate problems of the area.

There are still a few small but quite problematic groups. The Kiowa, regarded as a distinct linguistic family, have affiliated with them, under the name Kiowa Apache, a group of Athabascan stock, probably the Kaskaia of Long. The Sarsi, another Athabascan group confederated with the Blackfeet, seem to have left their northern home just before the historic period, and references to them in Henry's Journal make it probable that further research will clear up their history as in the case of the Cheyenne. Should this come to pass, the Sarsi, the Kiowa Apache, and perhaps the Navaho and Apache of the Southwest will line up in similar manner to the divisions of the Algonkian stock. The Kutenai, a small group speaking a distinct language, are credited with morphological leanings toward the Shoshonian, and while they now reside chiefly in Canada west of the mountains, there is traditional and indirect historical evidence of their having lived in Alberta near the site of Rocky Mountain House. The Assiniboin and Blackfeet claim to have driven them westward out of the plains. Whether they represent a former plains people or a very distant branch of pre-Shoshonian peoples arrested in their effort to reach the plains remains a problem. In the same connection the Nez Percé and related groups should receive some attention.

Now, taking the area as a whole we find this interesting condition: With one exception all the tribes residing therein at the beginning of the historical period can be satisfactorily traced, even with our present imperfect knowledge, to beyond its borders. This exception is the Kiowa who roamed in the heart of the area and who seem to have no relations in any other part of the continent. Thus the Kiowa present one of the most important problems. On the other hand another general problem arises: Was this area inhabited by previous groups, and, if so, what was the character of their culture? Naturally this is an archeôlogical problem.

While our knowledge of the archeology of the area is scanty it is increasing and already offers a few suggestions. The ground roamed over by the Kiowa, Shoshoni, Crows, Arapaho, Cheyenne, and Tetons seems to yield few artifacts that can be assigned to a culture other than that of the historical period. On the southwestern border we find traces of Pueblo culture. The western and northern borders of the area have not been explored. On the east considerable preliminary work has been done. Recent work in the vicinity of Omaha, in Minnesota and eastern North and South Dakota indicates a wealth of earthworks and other remains seemingly related to those east of the Mississippi. As the case stands it seems to indicate an older center of population near the eastern border of the Missouri-Saskatchewan area, from which it follows that the determination of its westward distribution is important. Contrary to the usual conditions there is need of immediate work in the middle of the area, because agriculture and its attendant industries are destroying surface remains the study of which would doubtless establish connections with the historical period, thus giving continuity to historical and archeological methods. All that has been so far brought to light suggests a prehistoric uninhabited region in the western part of the Missouri-Saskatchewan area, where the more substantial remains of eastern and southwestern cultures apparently dwindle to nothing. One is tempted to assume that we have here a direct connection with the historical period in that formerly groups reaching this region from the east and south gradually abandoned the more sedentary life of their ancestors as did the Cheyenne and other historical groups. However, our knowledge of the archeology of this area is so vague that an assumption of any sort seems scarcely justifiable.

So far we have sketched the more general problems clustering around the origins of the peoples found in the Missouri-Saskatchewan area at the opening of the historical period. In the solution of these, linguistic research must play the major part, but since so many families are represented an exhaustive study must be made of three widely distributed stocks, not to mention many more isolated ones. Fortunately there are no indications that any of the languages spoken in this area will become extinct during the next fifty

years. Unfortunately the same can not be said of culture, and in turning to the problems arising from the consideration of the origin of this culture we are impressed with the necessity for immediate work. Regardless of duty, however, the problem as to the origin of this culture is one of theoretical as well as historical interest.

The fact that almost every tribe moved into this area from adjacent regions and that in the historical period they had already acquired a culture generally uniform and quite distinct from that of the main groups from which they came suggests the question of the center from which this culture was dispersed and the manner of its dispersion. There is reason to believe that this problem can be solved by a comparative study of cultural details among the different tribes. While such a comparative study has yet to be made, there are not wanting suggestions as to origins for some of the most characteristic features of material culture. For example, there are traditional tendencies to refer the introduction of circular shields to the Comanche and Kiowa. Further, it is quite probable that the tipi in crude form was introduced from the north where we find similar types of conical tents extending from Labrador to Alaska. At least there are good reasons for believing that the tipi did not originate among the Shoshonian or Siouan stocks. On the other hand it seems probable that the Athabascan tribes brought in the idea whence it follows that by position the Kiowa and Kiowa Apache are probably factors in its adoption and intrusive distribution. A detailed study of the tipi in different parts of the area might offer a solution to this problem. All these, however, are but crude guesses, valuable only as preliminaries to investigation.

The modes of transportation suggest another problem. The introduction of the horse has not been thoroughly investigated from historical sources. Such a study is quite important but will be rather difficult in that it will require an exhaustive research among early documents in Spain, Mexico, and our Southwestern states. It seems a reasonable assumption that many modifications of customs came in with the horse as it passed along from one owner to another. While at the historical period all the important groups in the area were raising horses, these animals had yet failed to entirely displace the dog. The inventors of the dog-travois will prob-

ably never be located, but some light may be had on the problem of transportation by a general study of the distribution of dog-traction. It is rather curious that animal traction seems to have been confined to the northern and central part of the North American continent. Its most accentuated development is, of course, in the Arctic belt, with a fringe in the Mackenzie and Hudson Bay areas. So far as the Missouri-Saskatchewan area is concerned the problem is a minor one, since the greater development of dog-traction in the north suggests its introduction from that quarter. It is obvious, however, that taken in connection with the probable northern origin of the tipi and the theory of distribution of Eskimo culture from the Hudson Bay region, we are raising problems reaching beyond the area and involving the greater part of the continent.

On the side of the less material culture special attention has been given to the art, mythology, and social and ceremonial organization of many tribes so that our knowledge is much more complete here than elsewhere. Yet a great deal must be done before a thorough examination of the important problems can be prosecuted.

The art of the area presents striking individualities. Research in symbolism has brought to light very great tribal differences, so great, in fact, that the comparative value of the results is doubtful. The problems raised by these symbolic studies are psychological rather than ethnographical, and in so far not specific problems relating to this area. On the other hand an objective study of this art is of some promise. One suggestive general difference in distribution appears. The realistic decorative and other art seems to have been greatly developed on the northeastern border of the area, while the geometric was most accentuated on the southwestern. Thus on the northeast beyond the limit of our area the Winnebago especially possessed a highly developed pictographic type of quill and other decoration, while the Shoshoni of the extreme southwest of the area seem to have practised no such pictographic art but presented in contrast a highly developed geometric type both in embroidery and rawhide painting. Taking the Arapaho and Teton (Dakota) as two intermediate groups, we find the former inclining to the geometric art of their Shoshonian neighbors, while the latter show almost equal proficiency in the two contrasting types. From

a broader view it seems that the whole Siouan stock has a rather high development of this pictographic art. Thus we seem to have two influences from opposite directions, reinforcing the common suggestion that the geometric art of this area was introduced from the southwestern part of the continent.

A comparative study of songs, both as to music and functions, is as yet for the future. Among some tribes in this area the song seems to be regarded as the chief part of a ritual or formula. Assuming this tendency as general, songs become of great comparative importance. The correspondences in function and regalia between the ceremonies of different tribes is striking, but songs should on *a priori* grounds show even greater resemblances. Some of the material already available shows intertribal identity of rhythm and tone for the songs of some military societies. This whole subject, however, is undeveloped, and nothing can be said with certainty.

The mythology of the area has received considerable attention. The Algonkian group (Blackfoot, Atsina, Cheyenne, and Arapaho) show many correspondences, but have also much in common with the Siouan group. The Caddoan seems to have many elements in common with both. The Shoshonian group, on the other hand, stands somewhat apart in so far as it has less in common with other groups. Roughly it may be said that the mythology of the area seems to have come in with the various tribes and still shows an eastern and a western character. Unfortunately our knowledge of the Kiowa is too meager to place their mythology. Finally, a comparative study of the mythology of the Missouri-Saskatchewan area will involve a serious study of all the surrounding territory. Happily a large amount of material is already at hand.

When we pass to social and ceremonial organizations the complexity of our problem increases rather than diminishes. In the camp circle we find quite a characteristic feature and one concerning which there can be little doubt that it originated within some one group. Our knowledge of the significance of this practice is yet insufficient except perhaps in the case of the Cheyenne and the Kiowa. There are, however, indications that it was much more elaborate and ceremonially important among the southern tribes than elsewhere in the area. Among the Blackfeet the camp-circle seems

to be definitely attached to the Sun dance, suggesting that the latter may have been a factor in the distribution of the former. The units of the camp-circle, or the social organization of the tribe in this area, is an object of current discussion. Recently there has appeared a disposition to deny the existence of a clan or gentile system among the various tribes, except those of Caddoan stock. However, these units of the camp-circle, or bands, had names, and membership in them was determined usually by birth. In some tribes, at least, marriage was forbidden within the band, though it is not clear that any regard was paid to impediments save those of actual blood relationship. Here we have some of the features of clans and gentes. The question as to whether in such cases bands are clans or gentes might easily develop into a war of definitions, whereas the real problem is a comparative one. At least, the present need is a careful study of the band in the field to determine its social functions among the various tribes. For example, data are lacking for distinguishing between residence in a band of husband or wife and membership in the same, also as to the effect of residence upon the inheritance of the children. With sufficient data a comparative study would finally show whether the band system rests on a real genetic basis or is simply a mode of designating normal family groups for formal purposes in imitation of some pioneer tribe.

Another feature that has received a great deal of attention is the so-called age or military societies in which we find a progressive series of degrees or orders beginning with boys and ending with the superannuated. These societies offer unusual opportunities for determining centers for the distribution of ceremonies. A fair beginning has been made with these, but much remains to be done, especially among tribes of the Siouan stock.

In case of the Sun dance there are not wanting many indications that the ceremony as now practised by many tribes is the result of a gradual accumulation both of ceremonies and ideas. For example, some old men among the Blackfeet claim traditional knowledge of not only the order in which many features were introduced but the specific tribes from which they were borrowed. The torture feature of the Sun dance seems to have been a separate insti-

tution among the Missouri River tribes, later incorporated in their Sun dance and eventually passed on to other tribes. On *a priori* grounds it would appear that all complex ceremonies were gradual accumulations, even if there were fewer hints of such a genesis in the ceremonies themselves. The so-called age societies appear in one tribe, at least, ranked according to the traditional dates of their origin or introduction. From these suggestions it seems possible to take up with promise the untangling of the distribution and development of the ceremonial organization and activities of the Missouri-Saskatchewan area. With full data from each group it is reasonable to hope that the important features of many ceremonies can be traced to their originators.

There are a number of modern ceremonies of more suggestive than actual comparative value, since they have been introduced within the historical period and their movements traced. The most important of these are the Ghost dance, Omaha dance, Women's dance, Tea dance, and Mescal eating. Excepting the Ghost dance these flourish in almost all parts of the area under various names, but with the same essential features and songs. Some songs collected by the writer from the Omaha and Tea dances of the Blackfeet respectively were identified by a Pawnee as belonging to corresponding ceremonies among his people. Thus these songs have crossed the area. While these ceremonies are in a sense modern they should not be neglected, as they may serve as historical examples of the transmission of ceremonies from one tribe to another.

There are many other important ceremonies of varying degrees of distribution, such as the medicine-pipe, buffalo-medicine, sweat-lodge, puberty-rites, medicine-tipis, war-charms, etc., concerning which too much data can not be had for future comparative study. Also our knowledge of religious ideas is very incomplete. We have little chance of comparing the manito ideas of the central Algonkian group with those of the Algonkian group of this area, nor are we able to compare the religious ideas of the Shoshonian group with those of the Siouan. Unfortunately data of this kind are obtained with great difficulty and possess at best a large probable error.

While this paper is rather a summary of data needed than of data at hand, a few minor cultural distinctions may be tentatively suggested. The material culture, the art, and the social organization of the Missouri-Saskatchewan area seem more uniform than the ceremonial and religious culture. Perhaps this is to be expected when tribes move into an area from different points, topography and food conditions tending to level down the more economic aspects of tribal life. Some elaborate ceremonies, however, are not so uniformly distributed. For example, the members of the Algonkian group seem to fall into a class with respect to the Sun dance as opposed to the Siouan, Caddoan, and Shoshonian groups. The same may be said of their mythology. Taking a broader view of ceremonial organization, however, the Algonkian and Siouan groups constitute a class as opposed to the Caddoan and Shoshonian. This might be correlated with the directions of migration. Whatever may have been the primary migration of the Siouan stock, there is evidence of a secondary migration from the upper Mississippi region to the Missouri. From the same general direction came the Algonkian tribes. Thus their general similarities of culture may be credited to contact immediate and remote. Both the Caddoan and the Shoshonian stocks sent representatives into the area, but from different cultural centers. In addition there is the problematical Kiowa. These may be considered the hypothetical cultural influences. With more data and a final linguistic study of the area it will be possible to differentiate more satisfactorily the contributions of these various centers to the culture of the historical period.

AMERICAN MUSEUM OF NATURAL HISTORY,
NEW YORK.

NOTES ON THE ACHOMAWI AND ATSUGEWI INDIANS OF NORTHERN CALIFORNIA[1]

By ROLAND B. DIXON

The area occupied by the Achomawi and Atsugewi Indians, who form a portion of the Shastan stock, lies mainly in Shasta, Lassen, and Modoc counties in the northeastern part of California. The Achomawi territory was pretty closely restricted to the valley of Pit river and, as nearly as can be learned at present, may be described as follows: Beginning at a point above the mouth of Montgomery creek on Pit river, they occupied or claimed all the valley of that river up to its head, together with the valleys of Fall river and of Beaver and Ash creeks. Burney and Goose valleys were also claimed by them, but in the case of the former, the Atsugewi insist that they and not the Achomawi occupied it. Permanent settlements were made only in the immediate vicinity of the streams, although the Achomawi hunted as far west as the head of the McCloud and Mt Shasta, north to Medicine lake and south as far as Lassen Butte.

Unlike the Achomawi, the Atsugewi did not occupy a continuous area, but were divided into two separate groups. One of these, and the larger, was settled on Hat creek, from its head down to about one mile below the present town of Cassel, and in Burney valley; the other in Dixie valley some twelve or fifteen miles to the east. The Atsugewi seem to have had a clear idea of unity among themselves, and to have formed a distinct group apart from the Achomawi, with whom, however, they were usually on good terms.

The area outlined lies along the southern edge of the barren and forbidding Lava Beds which extend for so many miles along the

[1] The following notes were made in 1903 while the author was engaged in getting linguistic material from these two members of the Shastan stock, as part of the work of the Huntington Expedition. As no further opportunity has occurred to continue the work in this region, it seems undesirable to withhold any longer such information as was procured. These notes are therefore published by permission of the Trustees of the American Museum of Natural History.

Oregon-California boundary east of the Klamath lakes. The southern edge of these lava flows forms really the northern limit of the Achomawi territory, which may be described as a series of wide, semi-arid plains, lying at an elevation of about 4000 feet, separated from each other by rugged, mostly timbered ridges, rising some 2000 feet above the level of the surrounding country. Across these plains, and through these ridges, Pit river and its tributaries run, often cutting rather narrow, deep valleys. Below the mouth of Fall river, the Pit has cut a tremendous cañon across the confused mass of mountains lying south of Mt Shasta, and in this portion of its course offers few available sites for settlement. In some cases, as in Goose and Dixie valleys, there are large swampy areas. To the south, about the head of Hat creek, lies the desolate volcanic region of cinder cones and ash beds about Lassen Butte. The climate of this whole area is decidedly arid, with hot summers and rather cold winters. The flora is largely that of the dry, interior plateaus, and the fauna as a whole poorer than in the regions to the west and south.

Both Achomawi and Atsugewi were divided into a number of fairly well defined groups. Detailed investigations along this line were not made, but in a long series of geographical terms obtained, most of Powers' divisions can be recognized. To these may be added the following: Amit'dji (Ach.) = Apwarukē'i (Ats.) = Dixie Valley people; Ap'amadji (Ach.) = Wamari'i (Ats.) = Burney Valley people; Idjuigilum'idji (Ach.) = Ak^{h}owi'gi (Ats.) = Beaver Creek people. The Achomawi called the Hat Creek people Baqā'mali; and the latter called the Achomawi in general, Pomarī'i.

The dress of the men consisted of a belt under which was passed a strip of skin, tanned with the fur on, so that it doubled over the belt, and hung down as a small apron in front. The regular breech-clout was not worn. Poor people used coyote skins for this purpose, whereas the wealthy made use of mink, otter, or silver fox. Moccasins of deerskin were worn on the feet in summer, the poorer people often using a low, slipper-like shoe or sandal of tules. Wealthy men sometimes wore deerskin leggings, decorated with quillwork and fringed. On the upper part of the body men wore a deerskin garment, somewhat like a shirt. A hole was cut

for the head, and then the skin sewn up under the arms, making a sleeveless garment which was belted at the waist, and sometimes decorated with quills. Deer-hide robes, with the hair on, were used in cold weather also. In summer men wore a netted cap similar to those used by the Maidu; in winter a cap of fur was sometimes worn. The skin of a mud-hen was used for a glove, or mitten.

The women's dress was of two sorts: either a deerskin fringe or apron, reaching to the knee, the fringes being threaded through pine-nuts or small pieces of bone; or else a skirt of deerskin, made of several skins, wrapped about the waist and held up by a belt of fur. Moccasins were worn on the feet, and the upper part of the body was covered with a garment similar to that worn by men. On the head, women wore a basket cap.

Men wore their hair long, either rolling it under the cap or letting it stick up in two horns, one on each side. Women braided it in two braids, wrapped with mink-skin, and allowed them to hang in front of the shoulders. The ears were pierced by both sexes, and ear-ornaments of beads, dentalia, etc., worn. Men pierced the nose also, and wore a small string of beads or a single dentalium shell therein. Headbands were made by the Atsugewi of quills, strung side by side on threads in the same manner as the feather bands of yellowhammer feathers made by the Maidu and other Indians to the south. Tattooing was little used on the whole. Women made three lines on the chin, some also put lines on the cheek. Men occasionally had a line of small dots running from the eye across the temple.

Two sorts of houses were built by these Indians. The regular winter house was built as follows: An excavation a little more than a foot in depth was made over an area ten to twelve feet long and six to ten feet wide, one end being generally somewhat wider than the other. At the wider end two forked posts, six to eight feet high, were set up about two feet apart, and one similar post at the narrow end. A long pole was then laid from each of the two posts at the broad end to the post at the narrow end, forming a V-shaped ridge-pole, to which slabs of bark and poles were leaned from the edge of the excavation. The doorway was between the two posts at the wider

end, and usually faced south. The fire was in the center, and the smoke escaped through the space between the two ridge-poles. The second type of house was the so-called sweat-house. It was larger, and often built on a gentle side-hill slope or on top of a low mound. In this form of house the excavation was carried to a depth of about three feet over an area sometimes as large as twenty by thirty feet. One end here also was usually narrower than the other. A single post of large size was set up on the median line, about one-third of the distance from one end, and to it two stout rafters were laid, one from each side. At the farther end of the excavation then, an entrance passageway was dug, across the inner end of which a beam was laid, and from this two other rafters ran to the first two, leaving a narrow space between. On this as a framework, poles were laid and leaned from all sides, and then covered with brush and earth. The space between the second pair of rafters was left as a smoke-hole, and also served as an entrance by means of a ladder made of two poles with cross-bars tied on with withes. The Achomawi seemed to have used the dug-out entrance as the usual one, whereas the Atsugewi state that they used this merely as a draft-hole, and normally entered and left the house by means of the ladder. These larger structures were occupied by several families as a rule, and there were sometimes two or three of them in one village.

The houses were occupied only during the winter season. In the summer people lived outdoors without shelter, or with a simple windbreak or a rude roof of brush, open on all sides, or with a few mats hung up to keep out the wind.

The region occupied by these Indians was about on the eastern edge of the area in which the acorn forms the chief food. The more westerly portion of the people were able to get considerable supplies of this valuable food, but the easterly divisions were obliged to obtain what they could by trade. Acorns were prepared for eating in the usual manner, being dried, pounded to a fine meal, leached with warm water, and then cooked, either as a soup or in cakes as a bread. The mealing was done with a stone pestle, using a flat stone for a mortar, and a mortar-basket. Other vegetable foods used were various sorts of seeds and berries, together with roots.

The seeds were gathered by means of a seed-beater and a flattish basket tray, and were parched by shaking with coals, and then cooked as a mush. Manzanita berries were mixed with those of the skunk-brush, and were not used, it is claimed, to prepare the so-called "manzanita-cider." Various other berries were gathered, mashed, and dried in cakes and kept for winter food. Pine-nuts were much relished, and camass and other roots were to be had in some abundance.

Animal foods included nearly everything available. Deer were moderately abundant, and their meat was dried and preserved. Rabbits, squirrels, and other small game, together with ducks, geese, grouse, and birds' eggs formed the larger part of their animal food. Dogs were not eaten, but crickets, grasshoppers, and angle-worms were not disdained. Salmon were secured up as far as the Falls in abundance, and were dried and kept in large baskets, or sometimes crumbled into a coarse meal. Other sorts of fish, together with crayfish and mussels, were also eagerly sought.

Food was cooked either by boiling with hot stones in baskets or by baking in an oven of heated stones, or was roasted. No salt was used, it is said, by the Achomawi, as they thought its use caused sore eyes.

Various methods were employed in hunting deer. The use of pitfalls, which gave the name to Pit river, was common. These pits were six to ten feet deep, covered lightly with sticks and earth, and were excavated in deer trails. No one must look down into the pit after it is dug, as to do so would make the deer look down, and avoid the trap. All the earth removed was carried far away in baskets. Other methods used for getting deer included setting nooses; driving, either by beaters or by fire; stalking with a deer's head for a disguise and a whistle to imitate the cry of the fawn; and running down on snowshoes in winter. There were many regulations in regard to deer hunting. Children must keep quiet while the hunters are away; the latter must not use the common terms for the ordinary foods or the various places they passed, as to do so would bring bad weather; and the jaw-bones of all deer killed must be hung up on trees. The first day of a hunt there was a ceremony in the evening. The food for the evening meal was spread

out, but before eating, the leader of the party must take certain roots, chew them, and then throw a little toward every prominent mountain in the region, saying "Here, here is food we have brought for you! Eat it!"

Rabbits were either snared in nets by drives, and killed with a club, or shot with bow and arrow. Spring-traps were also sometimes used for rabbits, as well as for squirrels, wildcats, etc. Ducks and geese were caught in nooses hung from ropes stretched across a stream close to the water. The two ropes were placed close together, and each noose was tied to both ropes, so that the two were held closely in contact. The nooses were then slipped between the two ropes which held the nooses open. In salmon fishing, nets, spears, and traps were used. The first method was confined mainly to small seines, held across the mouths of tributary streams, while men went above and drove the fish down into the nets. Dip-nets were used for suckers and trout. Spearing was done with the usual salmon-gig. Traps and weirs were partly of posts and brush, and partly of stone. They were frequently put at the foot of a small fall, and were provided with long poles arranged along the top, slanting up from the top of the dam, and extending out four or five feet. The fish in trying to leap over, fell back into a net spread along these poles, or onto a rough open-work platform laid on them. Fish-hooks, of two pieces of bone, were used for trout and pike. In drying salmon, the fish was split, the backbone removed, and the fish dried in the sun. It was then slightly roasted, doubled up, and packed in large baskets which were set on bark and covered with large slabs of it, or else put up in the branches of juniper trees, from which the bark and lower branches had been removed.

The bow and arrow were the chief weapons of the Indians of this area. The former was of the broad sinew-backed type common to the northern portion of California, and seems to have differed little from that of the Klamath River stocks. If anything, it was more like the Maidu bow. Among the Atsugewi, at least, the bow was held horizontally in shooting, with the palm of the hand up. Each man marked his arrows in a different way. Quivers were of wild-cat, coyote, or otter skins. Elk-hide armor was used, consisting of a long gown-like garment, covering the whole body, the head also

being protected by a strip of hide. Grizzly-bear skins were sometimes used in place of elk-hide. Rod or stick armor was also made, the hard mountain mahogany and the service-berry being the woods used for the purpose.

There was comparatively little opportunity for the Indians of this region to make use of canoes. They made them, however, burning and digging them out of yellow-pine or cedar logs. They are said to have been rather square-ended, and ranged up to twenty-five feet in length. Both poles and paddles were used to propel them. Rafts of tule were also employed.

Baskets formed the main portion of the household goods. These were made exclusively of twined weaving. They were as a rule soft and pliable, except the conical pack baskets, which were strengthened and stiffened by the addition of four sticks. The baskets and their decorations have been elsewhere discussed.[1] Mush paddles were used in stirring acorn soup, but were mostly undecorated. Spoons were little used, although the breast-bone of the duck was employed for the purpose. A porcupine tail was used as a comb. Pipes were of wood or soft stone, tubular, and rarely more than six or seven inches in length. The musical instruments in use were a flute and a whistle. The former had four holes and was played only for pleasure, and never in summer on account of the snakes. The whistles were generally double, of bird-bone or elder, and these were used in dances by shamans. The split-stick rattle and deer-hoof rattle were both in use.

A number of games were played by the Achomawi and Atsugewi. The four-stick game, using ten counters, was a favorite; also the stick game in which thirty or forty slender sticks and twenty counters were used. A form of the hand game was known to the women, in which they used two pairs of sticks about two and a half inches long, one of each pair being marked by a band. The hands were concealed under a handkerchief about the neck, and the opponents guessed the relative positions of the sticks. Ten counters were used in this game. The same game, played in the normal California manner with grass, was employed by the men, and so far

[1] Basketry Designs of the Indians of Northern California, *Bull. Amer. Mus. Nat. Hist.*, XVII, 14 et seq.

as information goes was practically identical with the form described among the Maidu. Dice games do not seem to have been played. The double-ball game, and a form of foot-ball in which three players take part on each side, are also in use. The double-ball game is played chiefly by women. The Atsugewi at least had a form of hockey, played by the men, and a game in which arrows were shot at rolling disks of bark; also one in which spears were thrown, he who could place his nearest to the first one thrown, being the winner.

For the greater part, the Achomawi and also the Atsugewi were at war with the Modoc. These latter frequently made incursions into Achomawi territory, but the Achomawi rarely attempted to retaliate in kind. In such little trade as there was between the two peoples, the Achomawi gave beads for furs and bows. Intermarriage sometimes took place. With the Wintun there was considerable trade, skins being offered for beads, and in general the relations were friendly. With the Maidu of Big Meadows, the Atsugewi traded, and were on pretty good terms, intermarriages being not uncommon.

Little investigation has as yet been made in regard to social organization and kindred topics. So far as information was obtained, there is no trace of a clan system, and these people therefore are similar in this respect to the majority of California Indians and those of the adjacent portions of the Great Basin. Governmentally, it may be said that the chiefs or village head-men had somewhat greater power than among the Maidu, resembling in this the chiefs among the Shasta. Each considerable village had its chief, whose brothers or whose children succeeded him, the eldest son usually taking the lead. The chiefs were not elective, and could not be deposed (?). There were four or five important chiefs among the Atsugewi, and rather more than this among the Achomawi. In war these men seem to have led the people, but there were apparently no general leaders or chiefs who controlled several villages, or the whole group.

Puberty ceremonials centered about the piercing of the ears. Boys have this done at the age of seventeen or thereabouts. The earlobe is pierced with a sharp wooden awl, and as soon as it is done,

the operator, who is generally the father, shouts loudly and whips the boy with a bow-string. The boy at once runs away to some distant lake or spring, where he bathes and swims all night, fasting. As he goes, the man who has pierced his ears, calls to the mountains and to the Deer-woman to watch over the boy. Early in the morning the boy runs back again, lighting a series of fires as he goes. While he is bathing during the night, he may find something in the water, or may dream of it later when he takes a little sleep. That object or animal is his protector for life, and comes to warn him of danger and to aid him. Should he fail to get such a guardian, he may not try a second time. After this first experience, he must spend several nights alone in the hills, fasting, building small fires, piling up heaps of stones, and sleeping but little. All the time he is absent he must drink through a reed, failure to comply with which regulation would lead to the loss of his front teeth. In returning home, he may not come directly back, but must stop at a distance. His mother brings him here a little food, after eating which he goes off again into the hills. By no means all who go off thus see visions or get protectors. Most of those who do become shamans.

In the case of a girl, the proceedings are as follows: The ears are pierced in the same manner as described, and as soon as it is finished, the operator seizes the girl, lifts her from the ground and lets her down again, and then strikes her with an old basket. At once the girl runs off, while the operator prays to the mountains to be good to her. The girl gathers wood and returns at dusk, and all night dances back and forth before the fire which she builds. She faces constantly toward the east. Other people dance near her, and also inside the house. She must sleep and eat but little, and can have no meat or fish, and must not smell them cooking. She wears a band of braided bark about her forehead, and a new pair of moccasins on her feet. Sometimes she puts strong-smelling herbs in her nostrils so that she may not smell meat cooking. The people who dance and sing near her have a deer-hoof rattle. The girl dances thus every night for five nights, and at sunrise she stops, is lifted and dropped as before, and immediately runs off to the eastward, seizing, as she goes, the rattle from one of the dancers or singers. On the last morning she returns quickly, is sprinkled by

her mother with pounded fir-needles, then bathes, and the ceremony is finished. The whole ceremony of the dances is repeated at the next two menstrual periods. Later in life the monthly seclusion lasts three or four days, and certain food restrictions are in force.

A man who desires to obtain a wife asks the parents of the girl directly, and if they approve, the affair is settled at once by the payment by the suitor of such property as has been agreed on, and he then takes up his residence with the girl's family. He stays there, hunting and working for his wife's family for a month or two, and then if he has parents, takes his wife to their house; if not, he remains with his wife's family. Child betrothal was not infrequently the custom. If a man is dissatisfied with his wife, or if she be barren, he can send her back to her family. If a man's father tells him to send his wife back, he must obey. Polygamy was general, the number of wives depending on a man's wealth. The first wife was always regarded as the most important. "Berdashes," or men-women, were not uncommon.

In childbirth there were food restrictions for both man and wife which lasted until the umbilical cord dropped off. Both parents must live apart, in a small hut, the man gathering much wood. All water taken by the mother must have a little earth mixed with it. At the end of the period of seclusion, both man and wife must bathe. If a child is stillborn, the parents must keep up the food restrictions for several months. A child's first teeth, when they come out, are placed in its fæces.

The funeral customs of these Indians are simple. The body was buried as soon as possible after death, generally in a flexed position, and if the family could afford it, in a large basket. It was laid on its side in the grave, facing to the east. All the property of the deceased was put in the grave with the body, together with gifts made by relatives and friends. Sometimes, and particularly if death took place at a distance from home, cremation was employed, in which case the property was burned with the body, and the ashes afterward buried. Generally the house of the deceased was burned. There is said to have been no dance held at the time of the funeral ceremonies among the Achomawi, although the Atsugewi say that they themselves had a dance, in which men carried the weapons of

the deceased, and all relatives threw handfuls of dust into the air. In mourning, the hair was cut, and pitch put on the face and head by the widow, who wore it thus for two or three years. The Atsugewi state that men sometimes put pitch on also. The widow made a belt of the hair she cut off, and wore it. If a man's wife died among the Atsugewi, he cut his hair, and his nearest female cousin wore the belt made of it. Widows also wore a necklace of deerskin, with beads of pitch. The name of the dead was not spoken. No widow may remarry until her hair grows down to her upper arm again, and then she may marry only her husband's brother.

Notes on the shaman have been previously published,[1] but some additional particulars may be added here. The youth who is fasting and bathing at puberty dreams or has visions of the thing which is to be his guardian spirit. The thing seen may be a bird, an arrow, a reed, or a tree, or it may be a "disease person" or spirit in human form which sings to him, and appears before him. He must sing the song that the supernatural being sings to him, and very carefully follow his instructions, else he will fall ill. The shaman can hear the mysterious objects or beings singing ever afterward. According to the thing seen is the shaman's power to cure or cause disease — from one coming the power over one sickness, from another the power over a different one. In curing a patient, the shaman among the Atsugewi makes use of songs and also of the *qaqu*.[2] One of these is tied to a pole set up near the house, or is held in the hand, or used to sprinkle the patient. The *qaqu* tells the shaman where the pain is, and aids him to remove it. While dancing, the shaman frequently bleeds at the mouth.

The "pains" grow in size and strength by killing people. If the shaman does not catch the "pain" when it returns to him after killing the person it has been shot into, he loses all control over it, and it goes about killing people of its own initiative. This is the cause of epidemics. The only sure way to put an end to its depredations is to kill the shaman to whom such a "pain" belongs, for at the death of a shaman all his "pains" die also. Sometimes a

[1] Some Shamans of California, *Journal of American Folk-lore*, XVII, 24–25.

[2] Ibid., p. 24.

"pain" is sent by an enemy to a village. It causes much sickness, so that a shaman has to be sent for. When he comes, he finds the spot where the "pain" lies concealed in the ground. Then, with the aid of another shaman, he tries to drive it out. After dancing all night, the two shamans and all the people of the village gather in a circle about the spot. One of the shamans approaches, holding out his hand in order to scare the "pain." Sometimes the latter tries to deceive the shaman by urinating upward, but the wise man is not deceived by such trickery. He waits till by the force of his power the "pain" is forced out of the ground, and then catches it on the end of the middle finger of his hand. The "pain" cannot escape sideways, because of the ring of people; it cannot go back into the ground, nor can it fly upward, as the shaman's guardian spirits hover above, and drive it back. Gradually the "pain" is forced to the palm of the shaman's hands, while he is staggering about as if intoxicated. Suddenly he shuts his hand, imprisoning the "pain," and at once falls senseless. The second shaman then brings a basket of water, plunges the fist of the first shaman into this, and then slowly the first shaman revives. The "pain" is softened and made innocuous by the water. When the shaman revives, he tells the people what the "pain" has told him in his trance, and who it was that sent it. The "pain" is then destroyed, either by swallowing, or burying it in the ground under the fire, or is sent back to its sender, with orders to kill him. If a shaman tries to kill a person, and is found out, the relatives endeavor to kill the shaman, and then mutilate his body.

In doctoring, the shaman wears a bunch of woodpecker feathers, like the mysterious *qaqu*, on his head. Sometimes also he wears a yellowhammer band like those of the Maidu, or a strip of mink or other skin. He wears the skin of the animal whose spirit appeared to him in his dream at puberty. If he saw the bear, he wears a bear-claw necklace. The shaman also acts like the animal so far as he can, pawing up the ground or digging as a bear will for roots, or howling like a coyote.

Ghosts are seen about burial places. They emerge from the ground and sink back into it again. Shamans see them more commonly. For a common man to see a ghost causes a peculiar sick-

ness. The man feels very sleepy, has a headache, and swelling over the eyes. Shamans can by dreaming determine the trouble in such cases, and by sucking the forehead, cure the patient. No "pain" however is removed.

After death the spirit was thought to go to the westward, to an underworld where all things were delightful. To reach this spot, the spirit travels along the Milky Way. Spirits may return to this world and appear in dreams. Some shamans can visit this other world, and tell of their experiences. People have died and come to life again and told of their journey. They came to a place where the sun goes down, and looked over the edge of the opening into the underworld. Just before death, the spirit leaves the body, and stands about looking on at people, and at such times the shaman can see the spirits, and tries to seize them and force them to reënter their bodies.

There seems to have been comparatively little in the way of ceremonials apart from those described. The Achomawi and Atsugewi thus accord fairly closely with the Shasta, in this feature of the paucity of ceremonial. The mythology of this area has already been discussed.[1]

In conclusion, it may be said that from this brief sketch of the culture of the Achomawi and Atsugewi it seems clear that they were similar on the whole to the Shasta, although with several minor features reminding one of the Maidu and other central Californian peoples. The similarity to the Shasta is shown most strikingly in the religious beliefs and mythology, the material culture exhibiting more the influence of the changed environment.

HARVARD UNIVERSITY,
CAMBRIDGE, MASSACHUSETTS.

[1] The Mythology of the Shasta-Achomawi, *Amer. Anthropologist*, n. s., VII, 607–612.

PETROGLYPHS IN SOUTHEASTERN ALASKA

By GEORGE T. EMMONS

Primitive man throughout all ages and in all regions has ever shown a desire to perpetuate the history of the past and to record the story of his life. Wanting in specific characters, he employs pictures, carvings, and structures — the direct product of his surroundings — to illustrate and transmit his traditions, genealogy, and pursuits, and these are realistic or conventional according to his development.

The Tlingit of southeastern Alaska, living under most favorable conditions of climate and food supply, with abundant leisure to cultivate an innate sense of art, evolved in time a rich ceremonial that had for its purpose the glorification of the family in the display of the totem, or the practice of shamanistic rites which constituted his nearest approach to any form of religion or worship. Having at hand a variety of material, as rock, wood, grasses, the pelts of animals, and wool for weaving, besides mineral and vegetable coloring substances, his thoughts found expression in many forms of art, and he carved, painted, or wove realistic and conventional forms upon all of his belongings, which give that distinctive character and wealth of color to the life of this section.

Most permanent but least intelligible of all the earlier works of the Tlingit are their petroglyphs, which are of frequent occurrence in the vicinity of old village sites on the islands of the Alexander archipelago and the adjacent littoral. The present generation, even the oldest natives, have no knowledge of their origin or of their *raison d'être*. Some even deny that they are the product of their ancestors, and attribute them to a stranger people who in traveling along these shores, before their existence, made such signs to guide them on their way in returning or in again going over the ground; but this explanation is not worthy of consideration, for the carvings are very often in secluded bays beyond the routes of travel. The glyphs mark old living sites that are still traditional with the people,

and aside from the circles, spirals, and a few indistinguishable figures, they agree too nearly with the characteristic art of the Tlingit for us to ascribe them to others.

While some are found on prominent ledges and cliffs overlooking the water, in most instances the petroglyphs ornament isolated bowlders and beach rocks imbedded in the sand of the shore near the level of the tide. In the latter position they would seem to have served no useful purpose other than as a record of some tradition or legend, or as a means of displaying the emblem of the clan. In some instances they are simply the product of leisure moments and that love of the ornate that manifests itself throughout the life of this region.

In all the petroglyphs examined and here illustrated the grooves are apparently made by pecking and are in width from one half to three quarters of an inch, ranging in depth from one eighth to one fourth of an inch according to their state of preservation.

Some of the glyphs show considerable age, while in others the marks of the pecking implement are still clearly visible. From the corroborative evidence of contemporary events I can state that the one here discovered on Baranof island was in situ at the beginning of the nineteenth century; but how much earlier is unknown, for the Kake-satter family of the Sitka tribe, whose country this was, say that their chief, Katlean, who led the attack and destroyed the first Russian fort at Old Sitka in 1802, had a house on the shore at this point and used this rock as a seat.

What appear to be the older carvings show less realism, are more severe in outline, and are wanting in detail; and more often the principal characters are joined by means of numerous lines, circles, and irregular forms that are meaningless in themselves, but serve the purpose of making one connected picture, which, I believe, always represents a story. In those carvings that, from the roughly-pecked fractures made by the hand-stone, can be identified absolutely as of more recent workmanship, the forms are very true to nature and are much more ornate; and in a majority of cases the figures occupy separate fields, or, if together, are not connected and apparently bear no relation to one another.

In 1888, while hunting in one of the deep bays that indent the

Extreme length, 18 in.; Width at top, 12 in. (Am. Mus. Nat. Hist., E-2206)

PETROGLYPH (FACE) IN SOUTHEASTERN ALASKA

western coast of Baranof island, I met a very old native who claimed the locality by hereditary right, and in consideration of some presents was induced to show me a carved rock that my native hunters knew existed but had never seen.

It was near the mouth of a stream, at the edge of the woods, a short distance above the high-tide mark. Hereabouts, at least a century back, was a small village of which nothing remains and even the exact site is uncertain. The bowlder was irregular in shape but approaching a pyramidal form, some four feet high and of equal dimensions at the base. It was partly covered by a great decayed tree trunk, and wholly concealed by the branches and high salt-water grass. We could remove the obstructions from but one of the three faces, which was completely covered with a single closely connected picture, made up apparently of five principal figures. The grooved lines were almost obliterated in places by weathering, giving evidence of considerable age. The two covered sides were, I believe, ornamented. Although I could not clear them more than to feel some grooves, my guide interpreted the design, not perhaps from his own ideas, but rather from what he had been told by those who had gone before. When I had finished my examination, with something akin to reverence he covered the markings over completely with branches and debris, and as he and the native hunters who accompanied me have long since gone to their fathers, it remains to-day a forgotten monument of the past.

The picture (fig. 44) will be seen to be a complex arrangement of distinct figures connected throughout, and while my guide, who was a very primitive old Tlingit, could identify only the individual forms, to any one familiar with the mythology of this people their context clearly tells the oldest story of mankind — the creation.

This legend, common to all the Northwest Coast tribes, is too familiar to need repetition in full, so I will merely mention the salient features for a clear understanding of the picture.

The world in the beginning was a chaotic mass of rock and ocean, enveloped in darkness and possessed by a few powerful spirits which jealously guarded the elements necessary to human life. A benign spirit, known as Yehlh, who assumed many forms but more often appeared in the guise of a raven, came upon the

scene, created man, and wresting from the other spirits light, fresh water, and fire, he governed the winds, gave to his children all these benefits, and then disappeared.

In the picture Yehlh is beneath figure A, and is distinguished by the head and long bill attached to what appears to be a body with a leg and a foot in the double curved line depending from the head. To the rear the tail coming from the circle connects with B, which

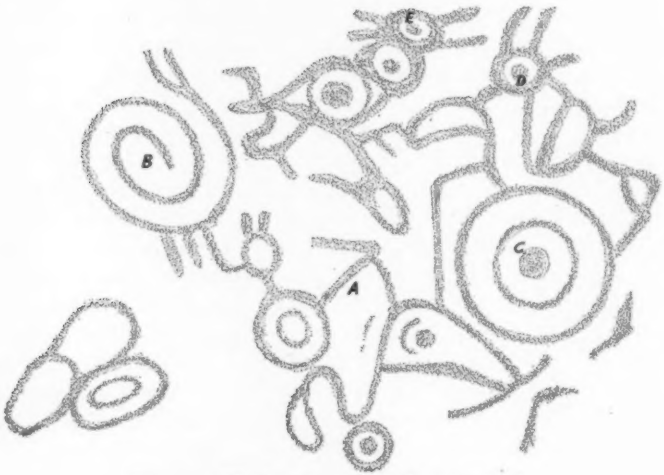


FIG. 44. — Tlingit myth represented in a petroglyph.

my interpreter named *una kgna hihk*, 'where the sunlight comes from.' In the bill of the raven is a half obliterated line which might signify the piece of fire that Yehlh stole from the sun and gave to the earth, but his principal connection with the sun was its release from captivity to light the world. Joined with the raven above and to the right is a figure, made up of three concentric circles (C), that represents the earth. Directly above this is a highly conventional form (D) identified as Hoon, the north wind, that plays an important part in the life of this northern country. To the left, above and over the center (E), is Kun-nook, the guardian of fresh water, shown often in painting and carving as a wolf form, from whom Yehlh stole

Width, *a* to *b*, 14½ in.; Height, *b* to *c*, 21 in.; Depth of incision, about $\frac{3}{16}$ in. (Am. Mus. Nat Hist., E 2207)

PETROGLYPH IN SOUTHEASTERN ALASKA

a few drops in his bill and which, as he flew over the world, he let fall here and there, forming the rivers and the lakes.

The illustration is from a simple sketch made on the ground; it does not pretend to exactness, but is a fair representation in general outline and proportions. Age and the elements have almost effaced some of the grooves, and possibly others are wholly lost, which would account for several sketchy lines beyond figures A and C and in the lower left-hand corner, but by feeling the depressions and filling them in with black beech mud I was able to bring out the design very clearly.

Near the northwestern extremity of Etoline island, included between two jutting rocky points, is a stretch of sand beach, and scattered along at and above the level of the tide are numerous smooth dark-gray rocks, seldom exceeding three feet in dimensions, irregular in shape, but generally presenting a flattened surface suitable for petroglyphs. Nearly all of these bear single figures, pecked in shallow grooves, representing a variety of subjects that in most instances are so realistic that the artist's meaning is unmistakable. Parts of several have been obliterated by the elements and the wash of the tide, or have never been finished, which make their identification uncertain, while two or three in which several indeterminate figures are grouped convey no intelligent meaning to the native. The animal designs, which largely predominate, are all totemic in character, representing the principal emblems of the family divisions of the Stikine tribe that inhabits this locality. Within the limits of the choice of subjects it would appear that the shape of the rock surface to be ornamented determined the selection of the particular character to be employed, that it might cover the greater space.

These carvings are unquestionably of two distinct periods. In the older ones the grooves are worn smooth and in places are almost lost to view through weathering and the action of the higher tides. Others, of a comparatively recent date, show the roughened indentations of the pecking implement. I can only offer in explanation of this difference that the old village site at this point was occupied at two different periods, which with the Tlingit was not an uncommon practice, as I can point to half a dozen living places that have been occupied, deserted, and reoccupied in turn. The natives here-

abouts can offer no explanation for the making of these pictures, nor as to their age; they simply say that they were there in the lives of their father's fathers, which means nothing.

The following illustrations are likewise from rough sketches which merely give the picture and do not pretend to exactness of proportion.

FIG. 45.

FIG. 46.

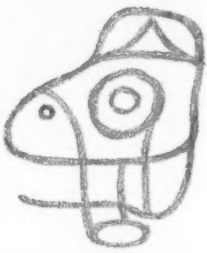


FIG. 47.

Figures 45 to 47 represent *goutch showee*, wolf's head, which is distinguished by the prominent nose and ears. In Fig. 45 the teeth are indicated by the divisions of the mouth. In Fig. 46 the teeth are expressed by the marks, back of which wrinkles of the jaw are shown in the two curved lines, and the same are found in Fig. 45. Fig. 47 is a more conventional expression. The ear identifies the wolf's head more than the nose, which, though prolonged, is not so characteristic. The peculiar figure depending from the eye and the nose cannot be explained except as an individual conceit of the artist added for ornamental purposes, but I would suggest that it has some connection with the nose and nostril that in the drawing are not accentuated.

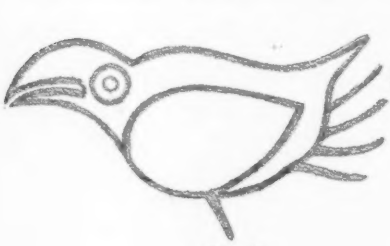


FIG. 48.

FIG. 49.

Figure 48 represents a very realistic raven form, *yehlh*, determined by the bill in particular.

Figure 49 is a more conventional type of the raven. The wing, in a fan-

ciful double form, is shown over the back, and the tail in the rear. The bill in this figure is truer to nature than in the previous drawing, and a slight crest is shown over the head which is often added to the conventional form. The markings of the body, while ornamental in character, also refer to the internal structures.

FIG. 50.

FIG. 51.

Figure 50 is identified as the head of a sandhill crane, *dulth showee*, the typical feature of which is the long bill. In the picture this is suggested rather than expressed, the continuation being left to the imagination, for I could not distinguish the grooved lines beyond the point shown, which from their direction would indicate a great length before meeting. The long neck, which is a feature of this bird, is shown by the single curved line beyond the head. I would suggest in explanation of this petroglyph that for some reason the artist for want of time may never have finished it beyond this point, or possibly he exhausted his field, for it measured 14 ft. in length by 12 ft. in height.

Figure 51 shows the head of an eagle, which is easily recognized by the large curved upper bill turned down almost at a right angle to its outward course. The ear or crest on the head is regarded more as a head-dress ornament such as a chief might wear, and as the eagle is one of the highest emblems of a family, the head in pictography is often so represented as a token of esteem.

FIG. 52.

Figure 52 is identified as *chak quiddie*, eagle's nest. It is a conventional design, very similar to the carvings found on old feast dishes from the Haida and the Tsimshian. In form it represents an eagle's head. The upper and the lower bills are in one, and the shape of the head, so noticeable in that of the eagle, is marked by the curved rise above the eye. This picture is 18 ft. long by 10 ft. high.

FIG. 53.

Figure 53 represents a killer whale (*Delphinus orca*), readily recognized by the exaggerated dorsal fin that distinguishes it from the other members of the whale family, all of which have the blunt head, blow-hole, and large tail. In this figure the water-spout from the circular blow-hole is shown. The under fins take the form of arms and hands— an artist's license often employed. The body ornamentation besides decorating a bare space is a sketchy representation of the internal structure and organs, the curved line indicating the intestines.

FIG. 54.

Figure 54 is an excellent drawing of a salmon, *khart*. The head and the fins and tail are most characteristic. The ornamentation of the body shows the gills and the bone structure.

Figure 55 is an easily recognized shark, *toose*. The characteristic features of this fish are primarily the pointed head and the heterocerc tail ; but this drawing is true to nature in its entirety — a wonderfully accurate and artistic piece of work.

FIG. 55.

FIG. 56.

Figure 56. The main figure shows the copper, *tinneh*. It consisted of a shield-like plate, varying in size from tiny ornaments worn on the dancing robe or as ear-rings, to like forms four feet in height. While hardly to be called money, these coppers had a commercial value according to their size, and again they had an imaginary value according to their use and ownership. They were a sign of wealth, and were given away, whole or in pieces, upon potlatch occasions, displayed or placed upon mortuary columns. Originally

they were hammered out of native copper, but later they were manufactured and traded to the natives. The feature of a projection or handle on the side is unexplained. The unfinished figure appears in juxtaposition as shown, but is unidentified.

The numerous circles and spirals that are always in evidence whenever petroglyphs occur are variously interpreted by the best informed natives, and while in some cases there seems to be a general agreement, I do not know that we get at the meaning of those who executed them.

FIG. 57.

FIG. 58.

FIG. 59.

Figures 57, 58, 59 are said to represent the sun, which is emblematically used in carved forms and less frequently in pictography by the Tlingit. The wooden rattle — more often that of the shaman — which typifies the sun, is circular in form and hollow in the center or has a carved face within a smaller circle. In several cases the rays are represented as grooves or lines of inlaying, radiating from the center. The identification of Fig. 57 as the sun seems to be very reasonable, agreeing with the rattle form described. Figs. 58 and 59, consisting of concentric circles, are similarly identified, and are subjects of reasonable doubt, I should say, as this design is also used to represent the earth.

FIG. 60.

FIG. 61.

Figure 60 is said to represent the very old form of ceremonial rattle (*chuck-ah-hut-tar*) described by the earliest Europeans to visit the Northwest coast, and it has survived to within the last few years in its primitive form. It consisted of a frame of two circles of bent twigs lashed to two cross-bars at right angles to each other, which likewise served as a handle. The circles were hung with puffin beaks, deer dew-hoofs, or bits of ivory, horn, or bone, to make a rattling sound.

Figure 61 is identified as the wood-worm, which is a totemic emblem of one of the principal families of the Tlingit.

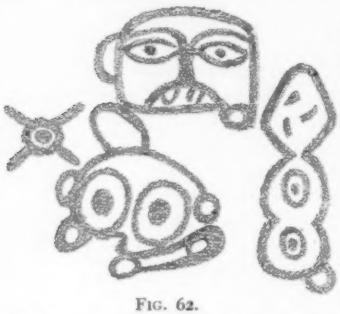


FIG. 62.

The figures shown in Fig. 62 are together on one rock; they are separate and apparently have no connected meaning. The upper face is human in form and is so identified by the one ear. The other figures are unknown, and while the one to the right shows a strong resemblance to a shark's head at the top, and the small uppermost figure to the left has every appearance of a starfish, and the more intricate one under the head shows something of the killer whale in the dorsal fin, I offer these explanations only as suggestions.

FIG. 63.

FIG. 65.

FIG. 64.

FIG. 66.

Figures 63 to 66 represent heads and faces, human or otherwise, rudely executed, half finished or partially obliterated. Fig. 63 appears simply as ornamental characters without any particular meaning. Fig. 64 is half obliterated. To the left of the head is shown what appears to be a hand or a foot. Figs. 65 and 66 are indeterminate faces.

PRINCETON,
NEW JERSEY.

PIMA TALES

By HENRIETTE ROTHSCHILD KROEBER

The Creation of the World

When Djivut Maka, Earth Medicine-man, was about first, it was all dark and he went around as a butterfly all alone. After awhile he began to think of creating the world. He went under the sea to get mud. He came up with a handful of mud, threw it up in the air, and it went up some distance above the sea. It stayed right there and did not come down. Then Djivut Maka stood on top of the mud and began singing. After a while the mud began to spread. It covered nearly all the sea, leaving open only what is water now. But it could hardly stand still. He made a spider and sent him to go around the edges and sew them. When the spider had gone round once and had the edges of the world all sewed up, it did not shake any more. Djivut Maka made birds, flowers, trees, animals. insects. Then he went around to see that everything was good, Then he thought of creating man. He took mud and shook it into the form of a man. Then he said: "In four days you shall be alive."

On the fourth day he came back. When he was a little way off he heard someone talking. When he arrived, there were two Apaches talking, and the other two were Pimas. The Apaches and Pimas tried to talk to each other, but they could not understand each other. Then the Pimas and Apaches always crossed each other. So one day Djivut Maka came and sent the Apaches away, and from that time the Apaches and Pimas have been enemies.

The Pimas and Apaches began to increase, and began to separate and live in villages.

Djivut Maka had a son, Siŏhŏ. He sent his son around to see the people. He knew something was going to happen to his son. The boy went through all the villages and came to the family and saw a little baby there. This baby looked good, so the boy, who liked the baby, thought he would steal it. So at night he took the

baby and went back to his home. Before he got there he left the baby in the bushes. Then he went to his house where his father Djivut Maka was. When he got there he told his father that he had found a little baby. So his father told him to bring it. When Siöhö got to where he had laid the baby, there was water coming out of the ground where there had been no water when he laid the baby there. He did not take the baby, but ran back and told his father. Then the father said: "I thought I knew something would happen."

The water came fast and a flood was coming. People became frightened, and birds and animals too. The coyote (or fox) came to Djivut Maka and asked to be protected. He put the coyote in a wooden box and told him to stay there until the flood was over. The woodpecker came and asked for protection too. Djivut Maka told him to hang to the sky until the flood would be over. Indians climbed to the tops of the mountains.

Djivut Maka and his son had made a boat before the flood, because he knew that there would be a flood.

Some Indians climbed on the highest peaks and when the water was coming up to them they all wept. They had a dog there. The dog had been running about. After awhile he spoke like a man. As soon as the dog spoke, the crying people turned to rocks. The mountain, Igakotke, stands southeast from Phœnix, and the rocks on top look like men.

The water reached the sky. The woodpecker was still hanging to the sky. When he saw the water coming he was afraid and began to cry. The water came up and touched his tail. Then the water went down again. It all went back to the sea again.

Then the woodpecker and coyote, Djivut Maka and his son, came together again. Djivut Maka said: "There must be more people." They all sat down, took mud, and shaped forms like dolls. The coyote made people with only one leg. When they finished, Djivut Maka went around to see how they had made the men. When he came to the coyote, he asked: "How will those people walk, having only one leg?" He became angry and threw all the mud dolls into the sea and took the rest of them and changed them to people.

When all the people were finished, they began to learn from Djivut Maka, and after a while they knew nearly as much as he. These Indians could do everything, so the son of Djivut Maka became jealous of them, and sent sickness over them. It killed about half of them.

Then these people began to consult how they could kill Siöhŏ. They asked the buzzard if he could do it. The buzzard knew where Siöhŏ bathed. So he went over and boiled this water hot. Next day the boy came, jumped in, and was killed at once. The buzzard took him out and threw him on the shore. Then the buzzard went back and told the people that in four years this man would be living again.

For three years the boys threw Siöhŏ's bones about. The fourth year they went there again. When they arrived they saw a man sitting on the ground. He was old. The boys ran home and told the people. Then they came again. The old man was ready to go away. First he went to his father's house where he used to live with his father. When he got there he talked angrily about the people and they commenced to quarrel. This man Siöhŏ who had been killed said he was going away but would come back again and flood the land.

When he was ready to go he took four steps and then sank into the ground. His father tried to keep him back but he would not be kept. He gave his father all that we have and see in the world now. Djivut Maka told the people what his son had said before he went. He told them that some day there would be another flood. So even to-day the old people say, when anything goes wrong, that there will be a flood and everything will be covered with water and destroyed.

The Man Changed to an Eagle

A man lived but had no home, so he went about and gambled. He cared for a girl and wanted to marry her. This girl did not want the man and told her father. The father gave her eagle feathers, saying: "Grind them up and mix them with pinole. If you ever see that man again, give him the flour with water to drink."

A well was a short distance from her house, where she went to

get water. One day as she went out to get the water this man who had no home was gambling with another man right by the road. As soon as he saw the woman go by, he said he wanted to get a drink. He did not want to drink, but to be near her. When he got to the well this woman told him to drink the pinole. After he had swallowed four times he became an eagle right away. The woman ran to the village to tell the people about the eagle she had seen. The men got ready with their bows and arrows to kill the eagle. When they came to the well they began to shoot at the eagle. The eagle just caught the arrows, and the men could not hit to kill him. After a while he began to fly and went to an old tree and tried to sit on it, but it broke, and he went on until he came to a high cliff. Then he made his house on that cliff and from there he went out to kill deer and all kinds of animals for food.

After a while he killed all the animals and could get no more to eat. Then he went to the villages and killed people. When he had killed half of them the people began to talk about it and tried to get some one to go up and kill that eagle.

There was one man whom they called Djivut Maka. This man had a son, Siöhö. This boy could do almost anything. So they sent him up to see if he could kill the eagle. So he went up there and when he got there the cliff was so steep he could hardly climb up. He sat down and began to think, and sang. He had a little stick and with it drilled holes in the cliff and kept on singing. In this way he climbed to the top.

The eagle was not there. But the woman the eagle loved was there. He had carried her from the village. The woman was glad to see Siöhö coming. He began to ask her where the eagle was. She said: "The eagle went away." Then he said he had come to kill this eagle. He asked the woman if she could do anything to help him. The woman said: "The eagle goes to sleep right after he comes from his hunting." This eagle had killed many men and piled them up on the cliff. So this man changed himself to a fly and went under the dead men's bones to hide himself.

Soon the eagle came back. Then he looked around for some one. After awhile he asked if any man was around. They had a little son, too small to talk understandingly, but he tried to tell the

eagle somebody was around. The eagle said he was sure there was somebody around, but after awhile he went to sleep, and the woman whistled for Siŏhŏ to come out. But the eagle woke up again when he heard the woman whistling and asked her what she meant. The woman said she was only glad of the game he had brought back. The eagle went to sleep again. The woman whistled again. Then this man who had come to kill the eagle came out and with his hatchet cut the eagle's head off. They killed his little baby too.

Then he told the woman to boil some water. After this water was boiled he bathed all the dead men the eagle had killed. Some of them, who had been killed a day or two, came to life again after they had been bathed. Those who had been killed about ten days before came to life, but forgot about their home and where they lived. Siŏhŏ sent these men who did not know their homes to the east, and from that time the white people commenced to settle all over the East. They were the people who did not know their home.

Siŏhŏ and the woman went back to their home. When they got back all were glad to see the man who had killed the eagle that had carried off the woman and killed so many men. And that's the last.

SAN FRANCISCO,
CALIFORNIA.

THE NATIVE TRIBES OF LOWER CALIFORNIA[1]

By ARTHUR W. NORTH

"Baja California, until half a dozen years ago, possessed the doubtful honor to be almost the least known territory in the world, with the exception of the polar regions and some few deserts and inland places, difficult and dangerous of access." Thus a noted geographer characterized the California peninsula in 1897, and thus I found it a few years later upon undertaking the compilation of its history and the exploration of its interior fastnesses. To-day, however, in consequence of the recent big-gun practice of the American men-of-war at Magdalena bay, and in view of the great commercial highway which the Panama Canal will open to its superb harbors, Baja California assumes a prominence that adds a popular interest to the ethnological value of all data concerning the native tribes of this little known Mexican territory.

Who first inhabited the peninsula?

On landing at the present site of the pueblo of La Paz, Hernando Cortés found a party of warlike Indians ready to oppose his advance into the interior. This was in the spring of 1534. A century and a half later Jesuit missionaries undertook the task of exploring, colonizing, and developing the country, and only their untimely expulsion by the Marqués de Croix in 1767 prevented these untiring workers from achieving success in their difficult undertaking. Prior to the coming of the padres various conquistadores and buccaneers had visited the southern part of the peninsula and found it thickly settled by Indians. In their logs the voyagers characterized these natives as brave in combat, skilful in diving, unaccustomed to the wearing of clothes, habitually possessed by an abnormal hunger, and always welcoming sweetmeats with yells of delight.

The missionaries quickly discovered that these same southern natives were divided into two main tribes, the Pericues, reaching

[1] Book rights reserved by the author.

from Cape San Lucas almost to the Bay of La Paz, and the Guiacuras, disputing the northern territory of the Pericues and occupying the country northward for three hundred miles to Loreto, the early mission capital of the Californias. A third tribe, the Cochimis, roamed over the region immediately above Loreto. Their range extended northward hundreds of miles to the southern spurs of San Pedro Mártir sierra, the loftiest peak in the whole Baja California cordillera.

In the aggregate these three tribes numbered twenty-five thousand members. While they are said to have possessed, even prior to the coming of the padres, a traditional respect for a supreme being, their tribal life furnished no evidence of any recognition of governmental superiors. Indeed, their only class distinction seems to have been sexual: the men made war, hunted, and enjoyed themselves; the women did the necessary domestic drudgery. The Jesuits gathered readily enough such information concerning the early history of these Indians as the latter possessed. Their forefathers, they said, had lived originally in a country far to the north; having been driven thence by a fierce tribe, they had moved southward to the peninsula.

Doubtless the Cochimis were akin to the Yumas of Arizona and California, but the Pericues and Guiacuras seem to have been distinct from all other tribes. In 1862 Francisco Pimentel, the noted Indian philologist of Mexico, conceived the idea that the Pericues might be related to the Indians of the Mexican mainland, basing his theory on the ground that one of the subdivisions of that tribe was known as the Coras; but after making a comparison of the vocabulary of the California Coras with one prepared for the Cora tribes of Sinaloa and Jalisco, he frankly admitted the lack of any similarity between the two tongues. Indeed, there was nothing in common between the languages of the Pericues, Guiacuras, and Cochimis.

The three tribes were tall, healthy, and robust people. They had coarse, dry, black hair; white regular teeth; and well formed ears, eyes, and mouth. The skin of the coast natives was darker than that of the Indians farther inland. Among all, deformities were rare and drunkenness unknown. The men wore sparse beards. After the coming of the missionaries the women began to

clothe themselves, but the men looked with disfavor on any personal application of the fashion. The Pericues soon had the best garments, a sort of skirt or long girdle made of fiber or of deer-skins being the principal article of their apparel.

The habitations of these people were of the rudest description, consisting of caves, excavations in the earth, circular pens of stones, and arbors of thatch. A pile of leaves, or even the bare ground, served in lieu of couches or beds. Essentially a pastoral people, they feared the chance cold and enjoyed the prevalent summery weather. Although fish-eaters and killers of game, the flesh of which they cooked by casting the raw slabs into the flames or upon the coals, they obtained most of their food supply from the cacti. Despite the frequent harvests of fruit gathered from the latter, the Indians were always more or less hungry. They killed game and went into combat with long bows, thick in the middle and tapering at the ends. Their arrows were more than a yard in length. The arrow-tips were hardened in hot ashes, and feathers were attached close by the notched ends; for hunting large game and for warfare, a long, fire-hardened tip with a flint point was attached to the shaft. These natives were children in their enjoyment of games and their distaste for work.

The first explorer to come in contact with the Indians in the northern section of the peninsula was Francisco de Ulloa, the discoverer of the Colorado. This was in the year 1539. In the following year Melchior Diaz, a captain under Coronado, found his way overland to the mouth of the treacherous stream and promptly christened it "Rio del Tison." In Castañeda's narration of Coronado's expedition it is written that "after going about 150 leagues, they [Diaz and his picked escort] came to a province of exceedingly tall and strong men — like giants. They are naked. . . . On account of the great cold, they carry a firebrand (*tison*) in the hand when they go from one place to another, with which they warm the other hand and the body as well. . . . On this account the larger river which is in that country was called the Firebrand river."

Nearly two centuries and a half passed, however, ere definite knowledge was acquired concerning these people. Then, during

the last quarter of the eighteenth century, the Dominican friars, having succeeded to the peninsular missionary field, established nine missions in the country to the north of the Cochimis, whose border subtribes they called Limonies. The unfortunate Dominicans early discovered that they had come among a people far more warlike and powerful than those in the southern part of the peninsula. Indeed, many of the friars lost their lives before the fury of these northern savages. In their scanty records the missionaries characterized their ungodly children as "unquiet, proud, fickle, quick-tempered, treacherous, warlike, and difficult to govern." Finally, the garrison soldiery undertook the solution of the Indian question by taking the most unruly members of the fiercest tribes and placing them among the more tractable groups; but at the same time these military representatives of Christian Europe spread broadcast the tainting diseases of civilization, and the decimation of the natives ensued. This was at the opening of the nineteenth century.

Roughly speaking, the Indians of the northern part of the California peninsula may be estimated at 20,000, at the close of the eighteenth century. On the timber-clad heights of San Pedro Mártir sierra lived the Kiliwas — or, as they have been styled by the Mexican military authorities, the Cahuillas. These, however, are a Yuman tribe, and should not be confused with the Shoshonean Cahuillas of southern California. Along the western and northern spurs of this great range and reaching down to the mouth of the Colorado roamed the Pais, or Pai-pais. About Santo Tomás and San Miguel, near the modern pueblo of Ensenada, dwelt the Gimiels, doubtless a subtribe of the Yumas. About the mission of Santa Catarina, some fifty miles southwest of the mouth of the Colorado, was the main rancheria of the powerful Catarina Yumas, while between the Gimiels and the Catarinas, and extending to the present American border, swarmed the Diegueños, locally known as "Diggers." The populous settlements of the Cocopa tribe were scattered along the western bank of Hardy river and both banks of the Colorado, while its hunters traversed the intervening delta region.

While the Kiliwas, Gimiels, and Catarinas were primarily hunters and warriors, all these six northern tribes engaged more or

less in agriculture, the Cocopas having the broadest fields under cultivation. The Cocopas, Pais, and Diegueños were peaceful by nature, the Yumas perversely warlike, the Kiliwas implacable when injured. The lance and the bow and arrow served all alike in their warfare; but the Yumas alone of the distinctively peninsular Indians employed the scalping knife. The Cocopas, Diegueños, and Pais seem to have

FIG. 67. — A Diegueño hut in extreme northern Lower California.

gone innocent of clothing; the men of the other northern tribes wore fiber or deerskin moccasins, breech-clouts, and war-bonnets. In physique the members of all these tribes, excepting the Diegueños, surpassed those of the southern part of Baja California. I have seen Kiliwas and Pais well above six feet in height and of superb proportions. Indeed, though historians have regarded the *Tisones* of Melchior Diaz as Cocopas, I am of the opinion that they were Pais Indians.[1]

[1] Under the name Pipi this tribe is mentioned by James O. Pattie in the *Personal Narrative* of his adventures and travels in 1824–1830, reprinted in *Early Western Travels*, edited by Reuben Gold Thwaites, vol. XVIII, pp. 200–201, Cleveland, 1905. The editor mistakenly regards them as probably the Pimas.

The end of the Baja California Indians is near at hand. Although they were a healthy people at the time of the coming of the padres, they did not long remain so, for measles, smallpox, and even worse diseases came into California on the establishment of the Spanish presidios and spread with frightful virulence among the natives. In seventy years the southern Indians were reduced to a scant five thousand; by 1794 none was to be found about some of the southern missions, and thirty years later it was recorded that not a single pure-blood Indian was to be seen below Loreto. Those who escaped disease, however, lived to an extreme age. So, indeed, do the Mexicans of Lower California today, and one may meet at Loreto even yet centenarians who tell of the closing days of the Spanish regime when the soldiers branded with red-hot irons each new band of Indians herded into the presidio.

The Pericues and Guiacuras are now practically extinct. Of the former thousands of Cochimis perhaps a hundred still survive about the missions of San Xavier, Santa Gertrudis, and San Borja. I am inclined to believe, however, that those at San Xavier should be classed as Guiacuras. The Cochimis are a good-natured people, far more formally religious than the neighboring Mexicans, and far more reliable workers; but they dress in similar rags.

Of the northern Indians there survive today remnants of the Cocopa, Catarina Yuma, Kiliwa, Pais, and Diegueño tribes, but only the first named can muster more than a hundred individuals. Warfare and the evil diseases, — tubercular not included, — with the tinned foods of civilization, must account largely for the vanished thousands. Moreover, as these imported evils swept away women as well as men, the old custom of polygamy has become obsolete and the high birth-rate of early days no longer prevails.

Pozo Vicente, the main rancheria of the Cocopas, is situated on the west bank of Hardy river; the Catarina Yumas live at the site of the old mission of Santa Catarina; the Kiliwas have two rancherias, Hwanuk and Arroyo León, both on the northern slope of San Pedro Mártir sierra; the Pais also occupy two rancherias, one called Dolores, the other unnamed, both lying between the mission sites of Santa Catarina and San Vicente. Finally, the Diegueños have two small villages immediately south of the border.

These latter Indians live, as did their kinsmen in Upper California, in temporary brush huts; the other northern tribes build more substantially of brush and stakes, roofed with earth and thatch. The shacks at Dolores are well constructed. In their agriculture the Diegueños, Pais, and Catarina Yumas have recourse to irrigation.

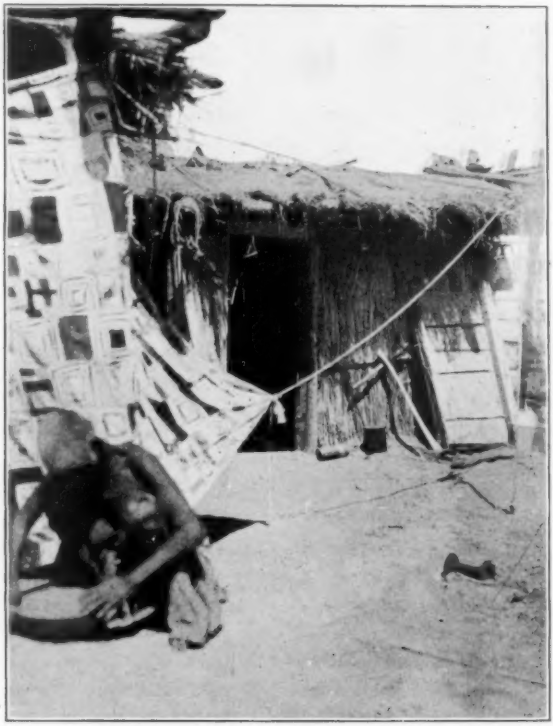


FIG. 68. — A Cocopa house near the Rio Hardy. An aged woman in the foreground crushing mesquite beans for flour.

Among the Cocopas two types are seen: medium height, dark coloring, and stocky frame mark the prevalent type; fine bearing, greater height and less weight, handsome features, and a burnt-red

coloring distinguish the other. The Cocopas wear their hair long, and of all the tribes have the strongest predilection for facial painting. The Kiliwas pay the least attention to clothing. The Yumas and the Cocopas have the most attractive little children. The early mission training of these natives is evidenced by their continued devotion to the Roman Catholic Church (except the Cocopas, who seem to disregard such matters) and by the presence in their rancherias of sacred utensils saved from the ruins of the missions. Opening the hives of wild bees, gathering piñon nuts, and fishing are popular with all the tribes. Although these people are great meat-eaters, they also consume quantities of cakes which the women

FIG. 69. — A Pais house at Dolores.

make of a meal prepared by crushing on a metate the seeds of the mesquite and of other leguminous trees and plants. The Catarina Yumas, the Pais, and the Kiliwas all have a local reputation as *ladrones*, and the explorer may well be watchful when in their neighborhood. The native men and boys are adept in the use of long-bows and arrows, but firearms are rarely seen in the villages. All are extremely fond of music. The following words are those of two songs of the Pais:

Hu-pa ma hup; sing yĕ a mi wai-sa.

A no-che, cheu spili pow-wow, cheu spili pow-wow,
Yu-i, myu-mai, chi-wamai ka-ka, chi-wami kaka.

The first line, again and again repeated, constitutes an old war song; the second and third lines are an ancient love song still in use among the Pais youth. In the Kiliwa language are found

such long words as *Pahamehamakaipa*, an American; *Marashripa-pchamakaipa*, an American girl; *chibiskwi-kwiro*, wire. Other terms are: *mezai*, good; *mahâ*, meat. But before I can make report on the language or myths of these people, I have further work to do.

With the disappearance of the Baja California Indians the ethnologist will see but a repetition of the passing of the people that occupied the peninsula prior to the coming of the Indians of history. What people was this? For want of a better name I shall designate them the "Petroglyph Makers." According to the usual Indian tradition these men were giants, for time is ever prone to add to the stature of a superior people. To my personal knowledge five distinct groups of cliff writings bear evidence of these prehistoric inhabitants. Though modern writers have had no word to add concerning the Petroglyph Makers of Baja California, the Jesuits recorded their deep interest in them, and while some of their statements are exaggerated, due to the misunderstandings of the period, they are not entirely without interest. Turning to the work of Clavijero,[1] the eminent Jesuit historian of the eighteenth century, we find the following:

> Observing the few ancient vestiges that remain there, it is rational to conclude that the vast peninsula was inhabited at an earlier time by a people less barbarous than those found by the Spaniards. The Jesuits, in the latter years of their management there, discovered in the mountains between the parallels of 27 and 28 various caves largely excavated in the living rock, and in them painted figures of men and women decently clad, and of different species of animals. These pictures, although rough, distinctly represented the objects. . . . Not belonging to the savage and tribal natives who inhabited California when the Spaniards arrived there, these pictures and dresses, without doubt, belonged to a people more ancient and unknown to us. There is a tradition throughout the country that it was a gigantic people who came from the north. We do not claim credit for these traditions, but from various exhumations of human bones by the missionaries it cannot be doubted that formerly the country was inhabited by men of disproportionate size.

After describing certain remains found at the Rancho of San Joaquin, below the mission of San Ignacio, by Padre José Robea in 1765, the author concludes:

[1] *Storia della California*, 1789.

Taking into consideration the magnitude of the cranium and the place occupied by the whole skeleton, and comparing the vertebræ with those of an ordinary skeleton, it is believed that the man to whom it belonged measured eleven feet in height.

According to Mallery,[1] a missionary thus expressed himself on the subject in 1790:

Throughout civilized California, from south to north, and especially in the caves and smooth rocks, there remain various rude paintings. . . . The colors of these paintings are of four kinds: yellow, a reddish color, green and black. The greater part of them are painted in high places, and from this it is inferred by some that the old tradition is true, that there were giants among the ancient Californians. . . . [One] inscription. . . . resembles Gothic letters interspersed with Hebrew and Chaldean characters. . . . It is evident that the paintings and drawings of the Californians are significant symbols and landmarks by which they intended to leave to posterity the memory, either of their establishment in this country, or of certain wars or political or natural triumphs. These pictures are not like those of the Mexicans [Aztecs], but might have the same purpose.

Bancroft, in his *Native Races*, discusses the anonymous account, last cited, locating the writings as made on a cliff near the old Jesuit mission of Santiago, some leagues below La Paz, and concludes with the statement that "the only accounts of antiquities relate to cave and cliff paintings and inscriptions which have never been copied and concerning which, consequently, not much can be said."

I will now submit in outline such new and additional data relating to the petroglyphs as I have thus far been able to gather during my explorations. I shall present three new groups, as follows:

1. The San Fernando Petroglyphs

An old Mexican directed me to these *jeroglíficos*, as he termed them, in February 1906. At that time I was visiting the ruins of the Franciscan mission at San Fernando, founded by Junípero Serra in May 1769, immediately prior to his departure for Upper California and his notable career in that favored region. San Fernando lies on the 30th parallel of north latitude. A short half-mile northwest of the mission ruins there are several high cliffs facing the

[1] Mallery, Picture Writing of the American Indians, *Tenth Ann. Rep. Bur. Ethnology*, 1893, p. 132.

east, and on these the petroglyphs were found. According to the native legend these *jeroglificos* were made by a race of great stature who inhabited the country long before the coming of the Indians.

The design or character which appears by itself at the right hand of the group and resembles a Roman numeral is identical with one of the characters in the Santiago group. At the very top of

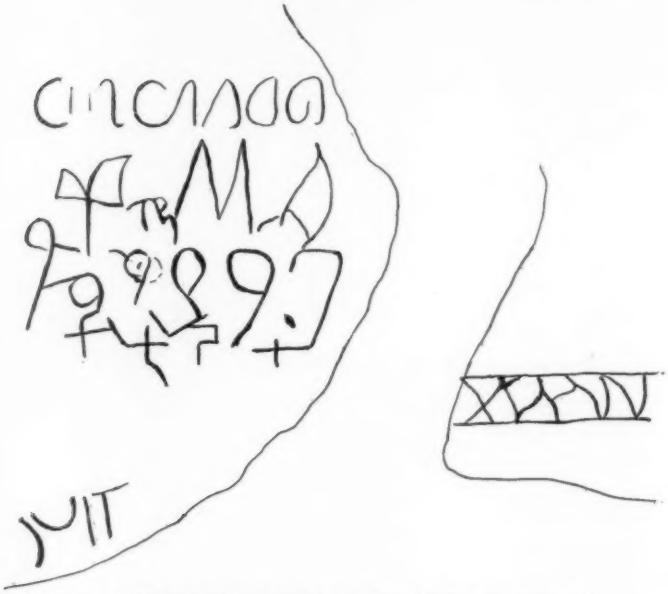


FIG. 70. — Petroglyphs at San Fernando. (Drawn by Ruth Haulenbeek.)

the cliff I deciphered certain letters, perhaps intended either for the Spanish *cruz*, or the Latin *crux* — a cross, anyway. It is said that these were added by the padres to dispel the evil inherent in the inscription below!

2. THE SAN PEDRO MÁRTIR PETROGLYPHS

This group is situated about a hundred miles north of San Fernando, in an arroyo opening out upon the northern side of the

Sierra de San Pedro Mártir. As their existence is unknown even to the Indians, and as I discovered them at a time when the heat was so intense that even my Mexican muleteer shortly deserted me, I experienced some excitement in coming upon them. This was in August 1906. The group consists of four successive sets, all of them facing the east.

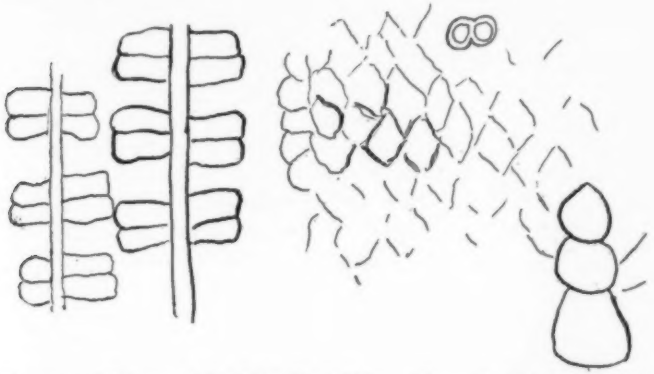


FIG. 71. — "Pine trees," San Pedro Mártir Sierra. (Drawn by Ruth Haulenbeek.)

The first set occurs on a bowlder not more than fifty paces from the bed of the arroyo. The design of this petroglyph is that of a conventional human heart enclosing characters. The others are near together and occur about a hundred paces up-stream from the first, on bold granite cliffs high above the bed of the arroyo. One of the last-named sets represents several persons approaching two pine trees. As the only pines in the neighborhood are on the crest of the sierra in the direction taken by the figures, this petroglyph may possibly be regarded as a guide-post of the ancient people.

Clavijero, in recounting the San Joaquin discovery, mentions that in one of the caves paintings were found representing "men and women with garments similar to those of the Mexicans, but they were entirely barefoot. The men had their arms open and somewhat elevated, and one of the women had her hair hanging loose down her back and a tuft of feathers on her head." Oddly enough

the figures of this group are not those of nude Indians of the peninsula, but of people "with garments."

On a cliff just above the pine-tree cliff are two figures either of persons with broad head-coverings or of a quadruped with human head and shoulders. Beyond this set there is a panel of figures on a broad and wide cliff, and, at the farther side thereof, a sharp design shaped like an hour glass (fig. 72).

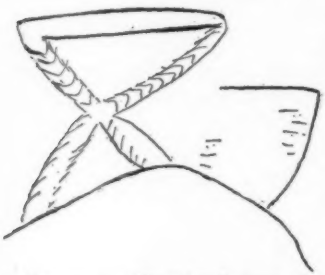


FIG. 72. — "Hour-glass" figure, San Pedro Mártir Sierra. (Drawn by Ruth Haulenbeek.)

Each of these last three ses of petroglyphs are more than four feet in height, cut in outline in the granite rock and the incision smeared with an unfading yellowish paint. Distance plays strange pranks with them, for at first glance they seem plain and accessible, but after one has worked his way laboriously toward them their inaccessibility becomes disappointingly apparent. Indeed, the people who marked these cliffs either had an abundance of rope ladders at their disposal or else lower buttresses of the crag have crumbled away.

3. THE ARROYO GRANDE PETROGLYPHS

These petroglyphs are pecked on a rock at a distance of less than fifty miles north of the last preceding group. The Arroyo Grande is an immense dry river-bed that debouches into the desert immediately southwest of the mouth of the Colorado river. It is a deep chasm in the midst of an excessively barren region. In one of the many rocky gorges that intersect the Arroyo Grande from the northwest there are eight or nine *tinajas*, or natural cisterns, where rainwater — when there is rain — collects, and the petroglyphs are cut shallowly into the face of a dark granite bowlder set above the largest of the *tinajas*. In the lower right-hand corner of the cliff there appears a figure which may have been intended to represent a human being. Aside from this it would seem as though the scribe had attempted to make an inscription rather than to delineate

human or animal figures. The design that at once catches the eye, however, is the rain sign so characteristic of the Hopi of Arizona — conventional clouds from which lines representing rain depend. Two other characters of interest are the M and the ⊕ which stand out from the center of the group. Here, moreover, as at San Fernando, are designs so far resembling the Phenician characters representative of *Bh* and *N* as to explain the classification of the California petroglyphs by the unknown chronicler of the eighteenth century as inscriptions of the Chaldeans and other ancient peoples, although, of course, they have no relation whatever.

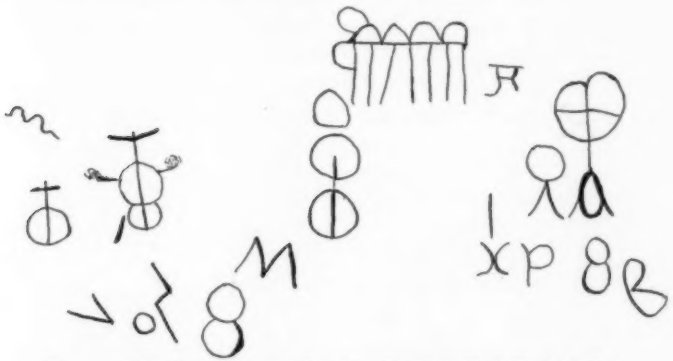


FIG. 73. — Petroglyphs in Arroyo Grande. (Drawn by Ruth Haulenbeek.)

These Arroyo Grande petroglyphs, though barely exceeding in any instance a height of eighteen inches, with the exception of three or four characters not included in the accompanying sketch, stand out distinctly.

4. OTHER EVIDENCE OF THE PETROGLYPH MAKERS

In addition to the cliff writings there are other signs in Lower California that bear testimony of the presence of a prehistoric people. Down the peninsula, just off the 27th parallel of north latitude, lies San Joaquin, the rancho at which the early Jesuit missionary found the "gigantic" remains and the cave with the "painted figures of men and women, decently clad." Near San Joaquin is the old mission

town of San Ignacio, the junction of numerous *caminos* dating back to the days of the padres. Some of these highways are said to antedate the Spanish conquest and to be relics of the skill of the Petroglyph Makers. Certainly a combination of many laborers with a remarkable knowledge of the art of road-building must have been essential for their construction.

To the north of San Ignacio a hundred miles lies the little mining pueblo of Calmalli, and only a few leagues to the west of the pueblo may be heard the booming breakers of the Pacific. On the cliffs of an arroyo near the shore appears a petroglyph showing unusual skill for this region, since the human figures and the designs represented are extremely well executed and enduringly elaborated with pigment.

A hundred miles still farther northward there rises a lofty barren range of granite mountains, and along the crest of one of its ridges a prospector recently found the remains of an ancient road cut in the rock. Before he had followed the road any great distance, the prospector's canteen failed him, compelling his retreat without having ascertained its objective. It would be interesting to explore this range, — and with relays of Indians to convey water, exploration would be possible, — for its course might disclose further traces of the ancient inhabitants. In this region and also in the vicinity of the Arroyo Grande *tinajas*, I found pottery similar to that made in the Hopi country of Arizona.

WALTON, NEW YORK.

AN EARLY ACCOUNT OF DIGHTON ROCK

By DAVID I. BUSHNELL, Jr

Among various manuscripts once belonging to the Royal Society, but now preserved in the British Museum, the writer found the following communications made in reference to the "inscription" on Dighton Rock, Taunton river, Massachusetts, and also several drawings of the markings. Although the figures have been reproduced by several writers[1] we are unable to find that the letters have ever been printed, and as they contain some rather interesting notes they are now given in full.

The first letter (Add. MS. 6402, fol. 106 et seq.) reads thus:

"N. E. CAMBS.
Dec. 8th 1730

"I have according to the desire of some of the Members of the Hon^{bl} the Roy^{l} Society which you mentioned to me in your last, examined the remarkable Inscription on the Rock in Taunton River described in the Phil. Trans. No 339 pa 73 and herewith send a view of as much of it as I could then possibly take, N^{o} 1. A·B·C·D·E· represent the face thereof being a plane nearly perpendicular to the Horizon looking N 6 W, in length from B to D· 11½ feet and in Depth from C to E· 4½ feet. This seems to have been left by Nature very smooth & is certainly in its subtance very uniform, compact & durable.

"B·G·D· represents the Surface of the Water at the time of Observation. I am informed that at some extrordinary Tides the Water ebbs below the Rock & some of undoubtible veracity belonging to the town assured me that the river has been constantly encroaching on that part of the Beach so as to waste the adjacent Lands which since the memory of many alive is something more distant from the Rock than formerly, tho' now but a few feit and that there are the like figures for some feit under A·E· which is the present surface of the Beach.

"In determining the characters or Figures I found some difficulty for the Indentures are not at present very considerable nor I think equally deep which put me upon the following Rule: vize, Carefully to trace out

[1] Garrick Mallery, Picture-Writing of the North American Indians, *Tenth Annual Report of the Bureau of Ethnology*, p. 762 and pl. LIV.

and Chalk all such places and those only which I believed were real Indentures, and in this part I desired the Revisal & assistance of the Revd Mr Fisher & others. Many places were passed over which did not seem to be indented, as to the Eye, tho' remarkably discolor'd, by some adherent matter in corresponding figures to the rest. I thought it more advisable to give such parts of these Characters as were real, that thereby the whole might be obtain'd; than to run the risq of a conjectural Discription which would certainly endanger the discovery of many parts, and for this reason I must also note that the figures are not at all so well defined as I have expressed them, the Bounds being scarcely perceivable in some of them. The Stroake also may be something, tho' very little broader; their Direction being what I cheifly aimed at. Time is supposd gradually to have impair'd them and one of Advanced Years in the Town told me he was sensible of some Alteration since his Memory and for this reason I have also sent you No. II which is a Draught of some parts of this Inscription taken by the Revd Mr Danforth 1680. This Gentleman observes with relation to it, that there was a Tradition current among the eldest Indians; 'That there came a wooden house (and men of another Country in it) swimming up the River Assoonet (as it was then called) who fought the Indians with mighty Success &c.' This I think evidently shews that this Monument was esteemed by the oldest Indians not only very antique, but a work of a different Nature from any of Theirs. It may not be improper to add here that this place was one of the most considerable Seats of Indians in this part of the world, and the River remarkable for all sorts of Fowls & Fish.

"After this description you may expect an Account of the Sentiments of some among us relating to this Inscription. Such as look upon it as the work of the Nature are little acquainted with her Operations and have made but a cursory Observation hereof. Two opinions prevail most.

"1st That these figures are the undesigning and artless Impressions of some of the Natives out of mere curiosity or for some particular use. 2nd That they are a Memorial in proper Sculpture of some remarkable Transactions or accident.

"That they are not the effects of mere Curiosity I think is very evident for 1st The Natives of this country were altogether ignorant of Sculpture and thense of Iron. And tho' they had some Stone Instruments none that ever I have seen are Capaple (in much better hands than theirs) of forming so accurate an Inscription and if they were, 2nd it is highly probable there would have been in the Neighbourhood or in some other parts of New England other sketches of the same or a like Nature & Regu-

C
N.° 1.
N.° 2
Inscriptio lateri perpendiculari Rupis in fluvio Taunton Novæ Angliæ insculpta.
N.° 1 Delineata per D.m Greenwood. Anno 1730
ABCDE Latus Rupis supra solum. BGDC Pars supra Aquas Sept.r 1730
ABGFD Flumen Assonet sive Taunitonense
N.° 2 Delineata per D.m Danforth. Anno 1680.

THE GREENWOOD (1730) AND DANFORTH (1680) TRANSCRIPTIONS OF THE DIGHTON ROCK PETROGLYPHS

larity which cannot be pretended. 3rd One would think thier Curiosity would have lead them to the Representation of Birds, Beasts, Fishes, Trees &c which we have since found to be their prevailing Genius & not to figures quite different from the Objects of their Senses. 4th They were a Nation too idle & irresolute for a work of so much industry & apparent Design.

"Some think these Sculptures were of particular use to the Indians in sharpening the Heads of thier arrows, their Axex &c, or at least that they were first formed by such means. This is obviated by two Considerations. 1st that there are no more (as I can yet hear) of such indented Rocks. If this was their usual Custom we should find these traces and Indentures very probably on many Rocks of the same nature as this and if it was political (a customary preparation to confirm & encourage one another in thier Intention or prosecution of War) no doubt but kindred & confederate Tribes would have had their respective Standards, But 2ndly The figures are too regular & uniform to comport with such an Occasion.

"And this brings me to the second opinion, viz. That these Figures are a Memorial in proper Sculpture of some remarkable Transaction or Accident which appears from the great Numbers thereof, from the likeness of several, from the Parallelism & Conformity of the Stroakes one with another in each, from the Circumstances of the Rock and Place which are very proper for such a design and from the equal Irregularity of some of the Oriental Characters &c. But for the farther Discovery of this our Hopes being placed upon the extraordinary Skill & Ingenuity of Mr La Croze in the Alphabet both antient & modern of the Oriental Tongues it is with pleasure I now take leave of this subject.

"If it should be thought proper to prosecute the Subject any farther I will endeavor to transmit unto the Society a large view of the whole Inscription with an Acct of some other Sculptures which probably were the work of some modern Indians. And this I esteem but a just Debt to that Illustrious Body who have improved in so eminent a manner every Branch of human Literature.

I am Sir

Isaac Greenwood

Hollesian Professor at

N. Cambridge.

"Some take this Inscription to be Hieroglyphical, thinking No 2 the first figure represents a ship without Masts and a mere Wreck cast upon the Shoals. The second representing a Head of Land possibly a Cape with a Peninsular, Hence a Gulf. (this according to Mr Danforth."

Evidently the foregoing letter was greatly delayed in reaching London, as in all probability it was the one referred to in the following note, found in MS. Vol. 4432, British Museum:

"N. E. Camb.
April 28. 1732.

"Hon Sir.

"I perceive by Yours that a Packet I sent to you upwards of a Year since miscarried in wch was an Answer to your Request relating to ye Inscription on ye Rock at Taunton. I am loth by this First Opportunity to omit sending a Coppy thereof. And with Thanks to you for your Favour I am with all due Respect

Your Oblig'd Humble Servt
J. Greenwood.

"If it should be thought proper to make it public I should be glad you'l would see that ye title *Hollisian* be placed before Profess. of ye Mathematicks and Philosophy at Camb. N·E·.

"Please to excuse my Brevity for I am but just now informed that ye vessel is immediately to sail.

"For Mr John Evanses.
Fellow of the Royal Society
London."

WASHINGTON, D. C.

RUINS AT AZTEC AND ON THE RIO LA PLATA, NEW MEXICO

By WARREN K. MOOREHEAD

In the spring of 1892 the writer conducted an expedition, with a personnel of eleven men, through the San Juan country in northern New Mexico. Some years later Dr T. Mitchell Prudden visited portions of the same territory and has described the ruins observed,[1] but as the archeological remains at Aztec and on the Rio La Plata have not been fully described by more recent observers, I present such of my original notes as relate to them. Our expedition was accompanied by a civil engineer, Mr Clinton Cowen, with two assistants.

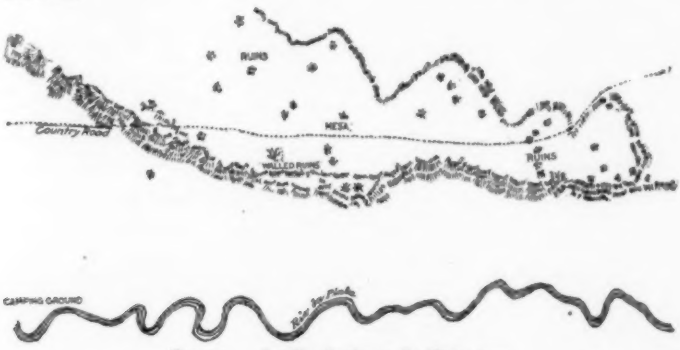


FIG. 74. — A mile of ruins on La Plata river.

At the time of these observations the ruins at Aztec were owned by Mr John Koontz, who permitted us to survey them, but would allow no extensive excavations. These ruins form a most imposing pile of masonry, and are the principal landmark in the valley of the Rio de las Animas for miles around. From their walls toward the west can be seen the beautiful snow-clad peaks of the La Plata range, seventy miles distant; to the eastward extend the lowlands

[1] *American Anthropologist*, vol. 5, no. 2, April–June 1904.

with the barren mesa for a background, and toward the north and south winds the Animas river. Our work at these ruins occupied two weeks.

There are two chief buildings, with a small one between and several others near by. The smaller ones were constructed of bowlders, and belonged to that numerous class known as "bowlder ruins" to distinguish them from buildings constructed of quarried stone. Scattered at intervals about the valley, near the ruins, are accumulations of earth and stone, resembling natural deposits, but close scrutiny reveals their artificial origin. About midway between the eastern and western divisions of the pueblo are ruins of a large kiva, surrounded on all sides by a series of small rooms. This kiva is of the same dimensions as several others occurring within the pueblos, approximating 35 feet, but its isolated position between the two ruins gives it greater interest.

The upper portions of the walls of the western ruin were in a poor state of preservation, and leaned to such an extent that we feared they might fall at almost any moment. In all probability when next the ruins are visited the walls will be found mingled with the mass of debris beneath. At the time of our examination it was readily determined that these walls once formed the third story of the pueblo, and, judging from the heaps of fallen stone, that the building must have been originally about four stories in height. While most of the upper walls had fallen, the heavy masonry and solid floors of the first and second stories remained intact. The piles of stone and earth, accumulated above them to a height of many feet, converted the lower stories into what were practically underground rooms. Communication from one to the other was afforded by means of openings large enough only for a person to creep through.

The western or large pueblo covers an area of about 60,000 square feet, and had an average height at the main front of eighteen feet, making in all about 16,000 perches or 400,000 cubic feet of masonry. The eastern pueblo averaged somewhat less than this, but its dilapidated condition made it impossible to give exact measurements in the limited time at our disposal. It would require a month to survey it in detail. The only chambers that could be distinguished were the seven kivas, which closely resembled those

of the western pueblo. The eastern pueblo is either considerably the older of the two or it was built in a less substantial manner, for at the time of our visit it was little more than an enormous heap of stones.

One of the most interesting features observed in connection with this remarkable group of ruins was that the quarries from which the soft stone used in the walls was obtained occur at a distance of about two miles. A broad trail or road leads from the ruins over

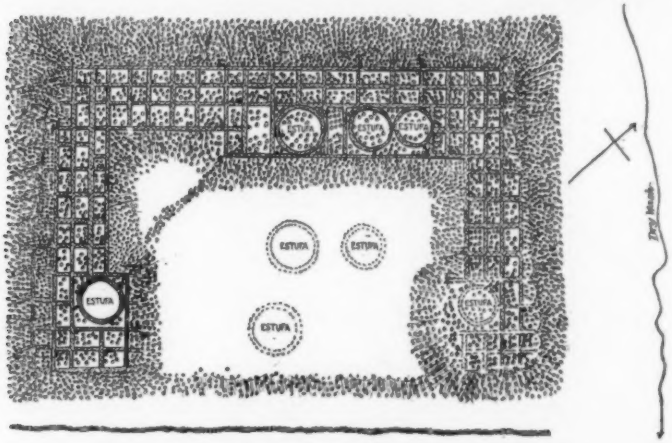


FIG. 75. — Plan of the western pueblo at Aztec, New Mexico.

the hills, across the valley, and back to the mesa where the quarries are. Numerous broken axes of rude form, stone hammers, and other quarrying tools have been found on the site. The trail does not follow the easy grades, but passes directly over a high and steep slope of the mesa, elevated perhaps 150 feet above the plain, and bears every evidence of having been well traveled.

The lower stories of the western ruin were in an excellent state of preservation. Throughout most of their extent the walls were of three stories, and with the exception of the lower portions facing the river, in no place were they less than two stories in height. The walls were composed of stones about as large as the ordinary granite paving blocks used in our cities today. The beams separating the

second story from the lower rooms were very heavy and well preserved. It was possible to creep through one of several openings into these lower rooms, and pass from one chamber to another until one had entered twenty or thirty apartments 10 by 12 feet and 8 feet in height, to several large ones 14 by 16 feet and 10 feet in height. I have seldom seen larger rooms in any of the Southwestern ruins.

The accompanying plan (fig. 75), drawn by Mr Cowen, will afford a good idea of the western pueblo. The outlines of eight kivas will be observed. In making the survey Mr Cowen was greatly handicapped by fallen walls and the completely ruined condition of some parts of the buildings. In places the accumulation of debris reached a height of twenty-three feet.

The valley of La Plata is narrower than that of the Animas, and is more fertile, making it a promising fruit and cattle country. In ancient times it was evidently thickly inhabited — quite likely by the same people that lived along the San Juan, since the architecture as well as the artifacts of the two regions are identical.

The number of rooms in the various ruins ranged from one to fifty. Sandstone slabs, as near the desired form as could be found, were used in the masonry. Many of these evidently did not fit well and were chipped or blocked into shape.

The ancient occupants of these structures irrigated hundreds of acres of the surrounding land. One could still trace the outlines of some of the ditches for several miles, in spite of the ever-shifting sand. The ancient farmer extended his ditches along the base of the mesa, not high up on its side as does the white ranchman of to-day. As the Rio La Plata has a rapid fall, it was not necessary for the ancient inhabitants to build a dam far above the tract they desired to irrigate. From the main canal, which seemingly was used in common, the people ran small acequias, or "laterals," and from these still smaller ditches to the individual garden beds. I say garden beds, for there was superficial evidence of thousands of small plots that had once been under cultivation and which lay some feet below the surrounding surface; but occasionally in the spring, when the melting snows of the Rockies swell the river to a raging torrent, the sand above in some places is washed away, ex-

posing what appear to have been garden beds much like those seen near our modern cities.

When watered, vegetation grows rapidly in this region. The owner of the land on which we were encamped gathered all his garden produce in six weeks from the time of planting. Without irrigation the soil is valueless, but with judicious flooding three crops a year

FIG. 76. — Doorways in the pueblo at Aztec, New Mexico.

may be produced. It is only by appreciating these facts that the dweller in the humid region can understand how a large population could have lived in so desert a land. The ancient Pueblos were not wanderers, seeking whomsoever they might prey upon, but lived in substantially built houses of stone or adobe and subsisted largely by agriculture, much as do their descendants to-day.

Farther up the Rio La Plata, where in summer the stream becomes so insignificant that one may leap across it, the region is likewise interesting to the archeologist. From a high point on the mesa the view is strange and fascinating. Little vegetation except piñon, cacti, and sagebrush can be seen. As far as the eye can reach are undulating valleys, with mesas and foot-hills intersected by deep cañons, and sentineled here and there by lofty buttes and pinnacles.

Along the mesa, about a quarter of a mile from the river, are numerous evidences of prehistoric occupancy. On almost every prominent point are heaps of debris and rudely squared stones, with an occasional wall remaining intact and projecting above the mounds, marking the homes of the former inhabitants.

Among the most interesting of the art remains found in this locality are the small and delicately formed arrowpoints, equaling in minuteness even those of the Willamette valley in Oregon. They are chipped from obsidian, jasper, moss-agate, and flint of many hues, and because of their translucence and delicate notching are much sought by the present inhabitants of the region. Some measure but half an inch in length, and are of exquisite workmanship.

At intervals along the mesa, and among the ruins, are found many stone axes, closely resembling those unearthed in the East, and many large stone metates, while the ground is literally strewn with fragments of pottery. At one point on the mesa we noticed, around a prairie-dog's burrow, numberless fragments of pottery, also pieces of human bone which the animal had brought to the surface. From these evidences we determined that the site was an ancient burial place, and soon after commencing excavation the sides of a bowl were observed protruding from a side of the pit. This proved to be basin-shaped, rather crudely decorated, and broken at the edges. Taking the earth from the vessel, we found two large bone spoons of unusual form, each evidently made from the femur of an elk or a bear; and one flint knife, about two inches in length and quite sharp. Carefully removing the earth to the left we uncovered a skull, lying face upward, in a good state of preservation. The head lay toward the east, but the legs had been doubled until the knees nearly reached the chest. The body had presumably

been interred in a sitting posture. This skeleton was that of an adult; it was in a fair state of preservation, and lay about a foot and a half beneath the surface. From our experience we felt justified in believing that more pottery would be found near the right hand, and this supposition was verified, for at this point we uncovered a bowl nine inches in diameter and five inches deep, with interior decoration in red. Inside the bowl was a smaller one, and just beyond lay a small cup, two by four inches, in which was a flint knife. Some inches beyond was an earthenware ladle. Most of the large bowls found were covered with thin, round, stone slabs. More objects were found with this burial than with any other individual interment on La Plata river.

FIG. 77. — Skeleton with accompanying pottery in a La Plata grave.

The largest ruin on the mesa was roughly estimated to contain a hundred rooms. It was originally about three stories high; but at the time of our visit the walls were only a story and a half high, and were so covered with fallen masonry and other debris as to make it sometimes difficult to trace them.

One noticeable feature of this ruin was a passageway formed by two parallel walls two feet apart. One room at the western end showed evidences of having been burned. On the south side of the ruin is a large kiva, thirty-six feet across and of considerable depth. Several lesser kivas are near by. On all sides of this central

pueblo are similar ones extending along the mesas, each in such a ruined state that it was impossible to ascertain exact dimensions without excavation. Roughly estimated, they perhaps contained in all one hundred rooms, which, with those in the central ruin, would make a total of about two hundred rooms on the mesa.

Directly across the river occurs a sandstone ledge, with a dip of eighteen degrees to the south, which may be so easily quarried that the ancient builders were enabled to obtain slabs of good building stone with little trouble. Over the graves are invariably found large slabs averaging about three feet in length, two feet in width, and from one to three inches in thickness. Many of these graves were examined, the sandstone slabs having been placed immediately over the skeleton and serving also to protect the vessels. The graves contained perfect pieces of decorated pottery, slightly different from those obtained at Aztec and La Plata; but the skeletons uncovered here were in such a state of decay that it was not possible to preserve them.

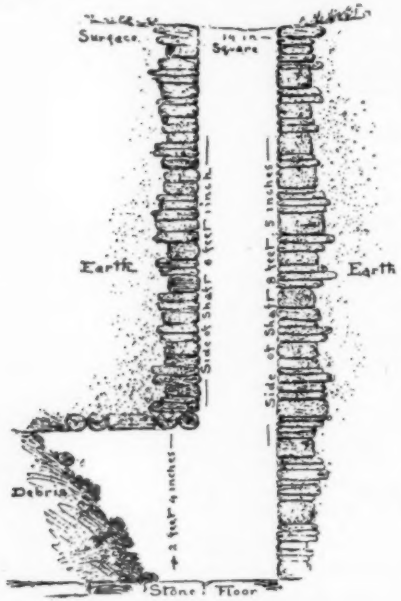


FIG. 78. — The shaft at La Plata.

About thirty-six feet southward from the central ruin last described a neatly walled shaft was uncovered, the aperture of which was fourteen inches square. This structure aroused our interest, for chimneys were never built in ancient pueblos, and the presence of a shaft extending straight downward from the surface of the earth was a unique

feature. In excavating we were compelled to take out many large sandstone slabs. At a depth of eight feet and five inches we reached the bottom of the shaft, which was paved with sandstone slabs; here the shaft turned at a right angle toward the north, in which direction was the central ruin. The roof of the shaft, beyond the angle, was composed of oak logs, with here and there an occasional stone slab. The horizontal portion of the shaft was two feet four inches in height and fourteen inches wide, neatly walled up, and entirely filled with earth and stones, which we were compelled to hoist to the surface in buckets.

After following the shaft about four feet farther we were compelled, unfortunately, to abandon the work; and thus were prevented from gaining sufficient evidence to determine the purpose of the structure. It could not have been a chimney, for neither the stones nor the logs showed signs of smoke or heat, although fragments of charcoal were found occasionally during the excavation; nor is it likely that the shaft was used as an air flue for the purpose of ventilation, both on account of the narrowness of the perpendicular portion (fourteen inches), and the apparent disregard manifested by the ancient Southwestern villagers of everything that might tend to promote hygienic conditions.

PHILLIPS ACADEMY,
ANDOVER, MASSACHUSETTS.

THE TOMAHAWK

By WILLIAM H. HOLMES

In preparing a brief article on the "tomahawk" for the *Handbook of American Indians*, much difficulty was experienced in the effort to obtain an adequate conception of the implement or implements to which the term referred originally and in early Colonial times. References to the tomahawk in the literature of the period are meager and contradictory, as shown by the several citations brought together in the following pages. The term was apparently first recorded in Captain John Smith's brief Indian vocabulary[1] prepared some time during the years 1607–09, where it appears as —

> *tomahacks*, axes [presumably English axes];

while in the same connection we have

> *tockahacks*, pickaxes [presumably English pickaxes],
> *monacookes*, swords [presumably English swords].

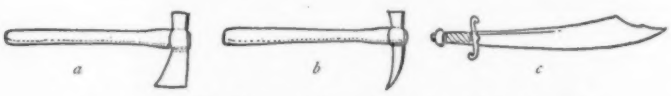


FIG. 79. — *a*, English ax. *b*, English pickax. *c*, English sword.

Strachey,[2] who was secretary of the Jamestown Colony (1610–1612), gives the following terms and definitions:

> *tamohake*, a hatchet [presumably an English hatchet].
> *taccahacan*, a hatchet [presumably an English hatchet].
> *tamahaac*, a hatchet [presumably an English hatchet].
> *monowhauk*, a sword [presumably an English sword].
> *cunsenagwus*, an Indian hatchet.

It would appear that these several names, except the last, were the Indian names for the English implements and weapons of the time (fig. 79), *cunsenagwus* being presumably the Indian name for

[1] Smith, *Travels, Adventures and Observations*, vol. 1, p. 147, reprint 1819.

[2] *Historie of Travaile into Virginia Britannia*, Halukyt Soc. Pub., 1849, p. 188, 190, 194.

the native stone implement corresponding most closely to the English hatchet, possibly the celt-hatchet or the grooved ax, or both (fig. 80).

The word *tomahaucks* occurs in Arber's edition of Smith's Works, page cxiii (Spelman, *circa* 1613), but the context is not clear, and its significance and application are therefore uncertain.[1] It may have referred to either a stone hatchet or any other kindred weapon.

FIG. 80. — *a*, Indian celt-hatchet. *b*, Indian grooved ax.

Other statements by Smith[2] and Strachey,[3] relating to the weapons of the Indians, are not more helpful as the word tomahawk is not mentioned. Strachey's words, "a long stone sharpened at both ends," may have referred to the stone hatchet-blade or celt, but do not accurately describe it (fig. 81); but the use of the implement as a hatchet for felling trees or cutting massy things asunder makes it practically certain that the reference was to the blade of the celt-hatchet, or otherwise to the grooved ax blade, or to the roughly sharpened stones so common in the Potomac region.

In only one case in the literature of the Virginia colonies, so far as noted, is the word *tomahawk* in any of its forms applied definitely

[1] "The weopons they vse for offence are Bowes and Arrowes with a weopon like a hammer and ther Tomahaucks for defence [?] which are [?] shields made of the barke of a tree and hanged on ther leaft shoulder to couer that side as they stand forth to shoote."

[2] "For their wars also they vse Targets that are round and made of the barkes of trees, and a sworde of wood at their backs, but oftentimes they vse for swords the horne of a Deare put through a peece of wood in forme of a pickaxe. Some a long stone sharpned at both ends, vsed in the same manner. This they were wont to vse also for hatchets, but now by trucking they haue plentie of the same forme of yron. And those are their chiefe instruments and armes." — Smith's *Map of Virginia*, Oxford, 1612, part 1, p. 23; also Arber's *Smith*, 1884, p. 364.

[3] "Some use a long stone sharpened at both ends, thrust through a handle of wood in the same manner, and these last they were wont to use instead of hatchetts to fell a tree, or cut any massy thing in sonder; but now, by trucking with us, they have thowsands of our iron hatchetts, such as they be."— Strachey's *Virginia*, p. 106, Hakluyt Society Pub., 1849.

to the Indian celt-hatchet or to any other native implement, and that is by Beverley, a hundred years later. This author states that "when they wanted any Land to be clear'd of the Woods, they chopp'd a Notch round the Trees quite through the Bark with their Stone Hatchets, or Tomahawks, and that deaden'd the Trees, . . . but now for all these uses they employ Axes, and little Hatchets which they buy of the English." [1] This statement, which associates the

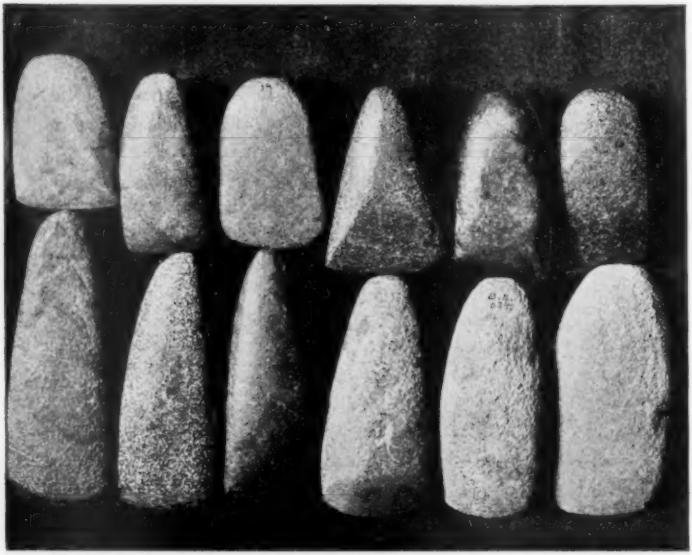


FIG. 81. — Typical celt-hatchet forms of the Potomac-Chesapeake region.

Indian name for the English hatchet, as recorded by Smith and Strachey, with the native stone hatchet (*cunsenagwus*), is strangely at variance with a very explicit statement found on an earlier page of the same work. Describing a clandestine visit to one of the houses of worship of the Virginia Indians, Beverley says:

> We found large Shelves, and upon these Shelves three Mats, each of which was roll'd up, and sow'd fast. These we handed down to the light, and to

[1] Beverley, *History and Present State of Virginia*, 1705, book III, p. 61.

save time in unlacing the Seams, we made use of a Knife, and ripp'd them, without doing any damage to the Mats. In one of these we found some vast Bones, which we judg'd to be the Bones of Men, particularly we measur'd one Thigh-bone, and found it two foot nine inches long : In another Mat, we found some Indian Tomahawks finely grav'd, and painted. These resembl'd the wooden Faulchion us'd by the Prize-fighters in England, except that they have no guard to save the Fingers. They were made of a rough heavy Wood, and the shape of them is represented in the Tab. 10. No. 3. Among these Tomahawks was the largest that ever I saw ; there was fasten'd to it a Wild Turky's Beard painted red, and two of the longest Feathers of his wings hung dangling at it, by a string of about 6 inches long, ty'd to the end of the Tomahawk.[1] [See Fig. 82, *a*.]

a *b*

FIG. 82. — *a*, Tomahawk shown in Beverley's plate 10. *b*, Tomahawk illustrated in Knox's *Voyages*, vol. II., 1767, plate opposite p. 165.

That the falchion-like implements here described with such minuteness were classed with the tomahawks of the Virginia Indians of that time is made clear by the illustration of the implement introduced into plate 10 of Beverley's work (see 3, fig. 83). This plate represents a native man and his wife at dinner, and was made up from Hariot's[2] plates 15 and 16, as Hariot's plate had been in turn copied with wilful inaccuracy from John White's drawing (now in the British Museum), made at Roanoke about 1585. The drawing of the tomahawk is referred to in the description of the Beverley plate as "The Tomahawk, which he lays by at Dinner."

In this connection the following lines from Hariot are suggestive :

> Those weapō's that they haue are onlie bowes made of Witch-hazle, and Arrowes of reeds ; flat edged truncheons also of wood about a yard long.[3]

This seems to indicate that aside from the bow and arrow the only weapon of the Roanoke Indians was the falchion-like wooden

[1] Beverley, op. cit., p. 29.

[2] Hariot, *A Brief and True Report of the New Found Land of Virginia*, 1590.

[3] Hariot, op. cit., p. 24.

club, and leads to the implication that the stone celt-hatchet was not regarded as a weapon, if, indeed, it was known at all among these Indians. The only observed indication that the celt-hatchet was known at Roanoke is found in plate XIX of Hariot, where, associated with a feasting scene, is depicted a man engaged apparently in splitting wood for the fire with an implement of this character, which, however, may be the English ax, doubtless even thus early introduced among the Indians. That the celt-hatchet was not an ordinary weapon among the tribes of Virginia is indicated by a similar statement by Strachey to the effect that "their weapons of offence are bowes and arrowes and wodden swords."[1]

FIG. 83. — Plate 10 of Beverley, with illustration [3] of "The Tomahawk, which he lays by at Dinner."

It is worthy of particular note that nearly all the illustrations employed in the works of Smith and Strachey are made up from the Roanoke Colony drawings of John White, executed between the years 1585 and 1590, excepting the scene in Smith depicting the saving of Smith's life by Pocahontas. Even the figures in this picture are plagiarized from White, whose drawings represent the Croatans of North Carolina, not the Powhatans of Virginia. It

[1] Strachey, op. cit., p. 105.

may be further noted that in the scene depicting the saving of Smith by Pocahontas the executioners flourish weapons of two classes (fig. 84), one the globe-headed club, the other a pick-like implement that answers in a way the description of the native "sword" with a

FIG. 84. — Weapons depicted in Smith's plate illustrating the saving of Smith's life by Pocahontas.

sharp stone or antler spike. The first of these weapons is not even referrred to by any of the colonial writers of Virginia. Again, it is seen that Beverley, without anywhere acknowledging the fact, makes up his plates from those of White, Smith, and other early writers, and although nearly all of these represent the Roanoke Indians, and the activities, customs, style of dress, etc., of that people, he suits his descriptions of Virginia aborigines to them, interpolating certain observations of his own relating to the latter Indians. This is doubtless due to the understanding on his part that the Powhatans had customs, arts, etc., identical with those of the Roanoke island natives.

In just what way Beverley fell into the inconsistency regarding the tomahawk, which he first describes from his own observations and illustrates as a falchion-like club of wood, and later refers to as the Indian stone ax, it is difficult to conjecture.[1] If his evidence should be thrown out entirely on account of its contradictory nature, then we have remaining of the original colonial Virginia evidence, only that of Smith and Strachey, which makes the word *tomahawk* apply to the English ax or hatchet, and the term *cunsenagwus* to the Indian stone hatchet. It will be necessary to determine the

[1] Beverley says in his preface: "I am an Indian"; and again, "I have added Fourteen Copper Plates, to illustrate the Dress, and Way of Living of the Natives, the Draughts of which were taken exactly from the Life. Herein, as well as throughout the whole Book, I have been very scrupulous, not to insert anything, but what I can justifie, either by my own Knowledge, or by credible Information."

etymology of these terms ere we can gain any further insight into their application. For the discussion of this phase of the investigation we shall have to depend on Mr W. R. Gerard, who is a close student of Algonquian etymologies.

The Smith illustrations have little ethnological value, as the artist has introduced Smith into compositions made up of figures of Roanoke Indians borrowed from John White; and the figure of the "great King of Pamunkey," captured by Smith by seizing him by the hair,[1] is merely a bad copy of one of White's figures. In the works of Smith, Strachey, and Beverley there is no single figure drawn from the Powhatans, and no costume, implement, ornament, or other object of art derived from the belongings of that people. All are plagiarized, with one apparent exception, from John White's original drawings or from Hariot's reproductions of these, or some other outside source, the exception being the drawing of the tomahawk in Beverley's plate 10, which represents the implement seen and described by Beverley himself. The graphic representations of New England authors are even less representative of the real natives of that section, and the record of the Massachusetts Indians, pictorial and descriptive, is so meager that the commonwealth of Massachusetts is not able to obtain a reasonably correct drawing of an Indian in costume for use on its seal. It is thus seen that the drawings of John White are the most accurate and important graphic representations of the native tribes of the Atlantic slope, and indeed they are nearly all we have to show us what the Indians of colonial days were like.

The earliest observed reference to the *tomahawk* by the colonists of the New Netherlands is that of Van der Donck (about 1650), as follows:

> Their weapons formerly were bows and arrows, with a *war-club* hung to the arm, and a square shield which covered the body up to the shoulders; . . . At present many of them use fire arms, which they prize highly and learn to use dexterously. They spare no pains in procuring guns and ammunition, for which they trade with the Christians at a dear rate. At present they also use *small axes* (*tomahawks*) instead of their *war-clubs*.[2]

[1] Arber's *Smith*, plate opposite page 343.

[2] Van der Donck, New Netherlands, 1656, in *Collections of the New York Historical Society*, 2d ser., I, 1841, p. 211.

Here it is clear that the term applies specifically to the European small ax or hatchet.

In the colonial literature of New England the earliest mention of the tomahawk noted is that by Wood, in the following lines:

Tamahaukes be staves of two foote and a halfe long, and a knob at one end as round and bigge as a foote-ball.[1]

In a recent article Bushnell furnishes the following interesting item:

FIG. 85. — Three clubs, catalogued as tomahawks. Tradescant Collection, Ashmolean Museum, Oxford.

In the Ashmolean Museum at Oxford, among the specimens which formerly belonged to the old Tradescant collection, are three clubs from North America (A, B, C, plate G). These are of great interest, as they are, without doubt, the oldest existing examples of that type of weapon. On p. 46 of the small printed catalogue [of the Tradescant collection in the Ashmolean Museum, Oxford] is a reference to "*Tomahacks, 6 Sorts.*" The three specimens now in the Ashmolean Museum were probably included in this entry.[2]

Illustrations of the three are given in figure 85.

In 1674 Gookin wrote as follows:

Their weapons were bows and arrows, *clubs*, and *tomahawks*, made of wood like a *pole ax*, with a sharpened stone fastened therein, and for defence, they had targets made of barks of trees.[3]

[1] Wood, *New England's Prospect*, 1635, p. 50.

[2] Notes on Certain Clubs from North America, by David I. Bushnell, Jr, *Man*, London, 1907, no. 59.

[3] Daniel Gookin (1674), in *Collections of the Massachusetts Historical Society*, 1792, 1st ser., I, p. 152.

This is the only observed reference in colonial literature, excepting that of Beverley, already mentioned, in which the term *tomahawk* is definitely employed in connection with the stone hatchet of the Indians. The value of Gookin's statement will necessarily depend on the familiarity he may have had with Indian life, and the statement cited may or may not be of greater historical value than the kindred statement of Beverley.

A reference by Josselyn, a year later, definitely relates the term *tomahawk* with the globe-headed club of the natives of New England:

> Their weapons of Defence and Offence are Bowes and Arrowes, . . . their other weapons are Tamahawks which are staves two foot and a half long with a knob at the end as round as a bowl, and as big as that we call the Jack or Mistriss.[1]

The following is from Rogers:

> Another instrument of great esteem and importance among them is the tomahawk. This is an ancient weapon universally used by them in war, before they were taught the use of iron and steel; since which hatchets have been substituted in lieu of them. But this instrument still retains its use and importance in public transactions; and, like the pipe, is often very significant. This weapon is formed much like an hatchet, having a long stem or handle; the head is a round ball or knob of solid wood, well enough calculated to knock men's brains out, which on the other side of the stem terminates in a point where the edge would be, if made an hatchet, which point is set a little hooking or coming towards the stem; and near the center, where the stem or handle pierces the head, another point projects forward of a considerable length, which serves to thrust with like a spear, or pike-pole.
>
> The tomahawk likewise is ornamented with feathers and paintings, disposed and variegated in many significant forms, according to the occasion and end for which it is used; and on it they keep journals of their marches, and most important and noted occurrences, in a kind of hieroglyphics. When the council is called to deliberate on war, the tomahawk is painted all over red, and when the council sits it is laid down by the chief: and if war is concluded upon, the captain of the young warriors takes it up, and with it in his hands dances and sings the war-song, as before-mentioned. When the council is over, this hatchet, or some other of the kind, is sent by the hands of some warrior to every tribe concerned, and with it he presents a belt of wampum, and delivers his message, throwing the hatchet on the ground; which is taken

[1] Josselyn (1675) in *Collections of the Massachusetts Historical Society*, 1833, 3d ser., vol. III, p. 309.

up by one of their most expert warriors, if they chuse to join: if not, they return it, and with a belt of their wampum suitable to the occasion.[1]

In connection with the above quotation, Rogers gives in the plate opposite page 165 (Knox) an illustration of "a tomahawk" reproduced in our figure 82, *b*, which he took from a figure in Picart's plate 14 (1723), while this in turn came, no doubt, from Beverley's plate reproduced in our figure 83. Although Rogers describes the tomahawk as a globe-headed club, he reproduces, in the plate just mentioned, Picart's globe-headed club and calls it a club instead of a tomahawk. That neither Rogers nor Knox had any first-hand knowledge of the subject treated may well be assumed.

President Dwight, of Harvard College, who had an intimate acquaintance with the New England Indians, beginning about 1770, makes the following statement, indicating clearly the understanding (or misunderstanding) in his time as to the significance of the word *tomahawk* in New England:

Another of the principal weapons was the well-known tomahawk or war club. I had one of these in my possession many years; in shape not unlike a Turkish sabre, but much shorter, and more clumsy. On it were formed several figures of men, by putting together thin slips of copper, set edge-wise in the wood. Some of them were standing: some of them were prostrated; and a few had lost their heads. The two last were supposed to denote the number of enemies whom the owner of the tomahawk professed himself to have killed. Since the arrival of the English, they have used fire-arms. To these they add a long knife: and a small battle ax, to which they have transferred the name of Tomahawk. This instrument they are said to throw with such skill, as almost invariably to hit their mark at a considerable distance.[2]

The observation regarding the transfer of the name *tomahawk* to the battle-ax indicates the understanding in New England that the word *tomahawk*, applied formerly to the war-club, had been at an early date transferred to the small battle-ax (hatchet) of metal.

McCulloh, who wrote at a much more recent date, furnishes the following paragraph:

The tomahawk, which is sometimes considered a weapon peculiar to the American Indians, was originally a club carved into some convenient shape. It was most commonly a stout stick, about three feet in length, terminating in

[1] An Abstract of Major Rogers' Account of North America, in J. Knox's *Voyages and Travels*, London, 1767, II, pp. 165–66.

[2] Dwight, *Travels in New England and New York*, 1821, I, p. 118.

a large knob, wherein a projecting bone or flint was often inserted. The hatchets of the Indians that are now called tomahawks, are of European device, and the stone hatchets so often found in our fields, and called by the same term, were not military weapons but mechanical tools.[1]

Morgan's interpretations of the tomahawk and related implements do not serve to throw light on the subject. Of the Iroquois, he says:

For cutting trees and excavating canoes, and corn mortars, in a word, for those necessary purposes for which the axe would seem to be indispensable, the Iroquois used the stone chisel, *Uh'-ga-o-gwät'-hă*. In cutting trees, fire was applied at the root, and the chisel used to clear away the coal. By a repetition of the process, trees were felled and cut to pieces. Wooden vessels were hollowed out by the same means. Fire and the chisel were the substitutes for the axe. The chisel was usually about six inches long, three wide, and two thick; the lower end being fashioned like the edge of an axe. Stone gouges in the form of a convex chisel, were also used when a more regular concavity of the vessel was desired.[2]

The chisel here described is clearly the celt or stone hatchet blade which was in common use among the Iroquois and neighboring tribes.

Again he states that —

In ancient times the Iroquois used the stone tomahawk. It was fashioned something like an axe, but in place of an eye for the helve, a deep groove was cut around the outside, by means of which the handle was firmly attached with a withe or thong. Oval stones, with grooves around their greatest circumference, were also secured in the head of war-clubs, and thus made dangerous weapons.[3]

It is thus seen that in Morgan's view the grooved stone ax was the native tomahawk, the celt or hatchet blade being regarded as a chisel, as indicated in the first citation. That Morgan was not clear in his interpretation is further indicated by the statement that "before the tomahawk came into use among the Iroquois, their principal weapons were the bow, the stone tomahawk, and the war-club,"[4] which statement is almost immediately followed by another:

The tomahawk succeeded the war-club, as the rifle did the bow. With the invention of this terrible implement of warfare the red man had nothing to

[1] McCulloh, *Researches*, 1829, p. 134.

[2] Morgan, *League of the Iroquois*, 1904, II, book III, pp. 9–10.

[3] Ibid., pp. 10–11.

[4] Ibid., pp. 13–14.

do, except in having it so fashioned as to be adapted to his taste and usage. The tomahawk is known as widely as the Indian, and the two names have become apparently inseparable. They are made of steel, brass, or iron. The choicer articles are surmounted by a pipe-bowl, and have a perforated handle, that they may answer the double purpose of ornament and use. In such the handle, and often the blade itself, are richly inlaid with silver. It is worn in the girdle, and behind the back, except when in actual battle. They used it in close combat with terrible effect, and also threw it with unerring certainty at distant objects, making it revolve in the air in its flight. With the Indian, the tomahawk is the emblem of war itself. To bury it, is peace; to raise it, is to declare the most deadly warfare.[1]

This author thus makes the war-club the predecessor of the steel hatchet, yet if the stone tomahawk existed as a weapon it would have been the natural prototype.

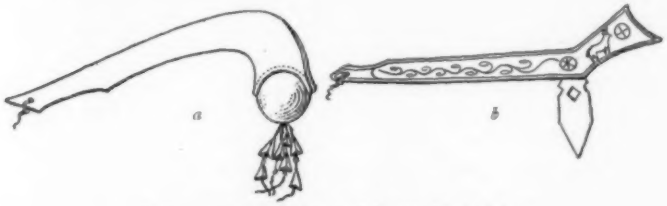


FIG. 86. — Western forms of the tomahawk club.

The details of the origin of the tomahawk-pipe which Morgan illustrates as the "o-sque'-sont [Iroquois], or tomahawk," may never be known. It came into use in early times, possibly as early as the

FIG. 87. — *a*, Tomahawk-pipe (Morgan). *b*, War-club with deer-horn spike (Morgan).

middle of the eighteenth century. In 1778 Colonel Johnson in writing to Lord Germain said that "the tomahawk which is so much talked of, is seldom used but to smoak thro, or to cut wood with."[2]

[1] Morgan, ibid., pp. 15–16.

[2] Ibid., p. 283.

It would appear from the various citations given that the evidence regarding the native use of the term *tomahawk* is meager and conflicting, and that no very satisfactory conclusion can be reached. It is clear that the word as first recorded by the English was applied definitely to the English metal hatchet by the Virginia Indians and that this use became general among the colonists, being applied later also to the ceremonial hatchet-pipe. The possibility that the name originated outside of Virginia, however, is suggested by the fact that both Smith and Gosnold had cruised along the coast to the north,

FIG. 88. — *a*, War-club (Morgan). *b*, War-club with metal spike.

carrying on trade with the New England Indians, and that a globe-headed club of northern type is depicted in one of the illustrations of Smith's *Works* (fig. 84, *a*). That the name was applied by the Virginia Indians, or by any of the tribes, to the native stone celt-hatchet (fig. 80, *a*) is not fully established. The English colonists applied it not only to the native celt-hatchet, but to the grooved ax, the falchion club, the spiked club, and the plain globe-headed club, and there is no evidence in literature to show whether the natives applied it to a single form exclusively or to two or more forms of weapons, or in fact whether they actually applied it to any, *cunsenagwus* being the only term definitely applied to the native stone hatchet in the literature of the Jamestown colonists.

An appeal to the etymology of the term is of little avail in the premises, as any analysis that may be made of its elements and their significance cannot be effective in determining its application in practice. I shall be glad, however, to leave the discussion of this point to those who can claim especial skill in the languages of the Algonquian tribes.

BUREAU OF AMERICAN ETHNOLOGY,
WASHINGTON, D. C.

THE TERM TOMAHAWK[1]

By WILLIAM R. GERARD

ETYMOLOGY: From Renâpe of Virginia *tämähâk*, an apocopated form of *tämähâkan*, '(what is) used for cutting,' a cutting utensil, from *tämähâkeu*, 'he uses for cutting,' from *tämäham*, 'he cuts.' A name applied by the Renâpe Indians, among whom the English settled in 1607, to a stone ax or hatchet employed as a weapon of offense and an implement for cutting or, more accurately, chopping wood. Captain John Smith, who was the first to mention the instrument (*Map of Virginia*, 1612), under the name *tomahack*, describes it as "a long stone sharpened at both ends"; and to this Strachey (about 1616) adds "thrust through a handle of wood," and which "they were wont to use for hatchets to fell a tree, or to cut any massy thing in sonder." Strachey, in his "Dictionarie,"[2] gives, in addition, as names for an Indian hatchet, *cunsenagwus*[3] (contraction of *kunästnakw*, 'hafted long-stone'), and *taccahackan* (*takähâkan*), a word which Smith gives in the abbreviated form of

[1] Following the suggestion made by Mr Holmes in the preceding article, and at the request of the editor, Mr Gerard has kindly furnished these notes on the origin and application of the term *tomahawk*.

[2] Many synonymous terms in this vocabulary were not employed by the Indians around Jamestown, but were communicated to its compiler by colonists who had visited various places in Virginia where the words were in local use. In fact, the vocabulary shows that Strachey knew little about the language of the Indians with whom he came into contact during his short stay in Virginia, and that the words that he recorded were made known to him by men, some of them intelligent and others semi-illiterate, who had resided a greater length of time in the country. This is sufficiently shown, among other things, by the orthography not only of the Indian words, but that of the English definitions, many of which are erroneous.

[3] In this word, as in very many others given by the same writer, the terminal *s* is an English addition. Eliot gives *quinahsinnonk* (*kwinā·sina^{n}k*), the Massachusetts cognate of Renape *kunäsinakw*, as a name for 'pestle'. In one case the hafted stone was sharp edged, and, in the other, cylindrical and blunt. The Southern Renape name for pestle was *pocohaac* (*pākähâk*, abbrev. of *pākähâkan*) '(What is) used for striking'; coradicate with Northern Renape (or Lenape) *pā·gämâkan* 'cutlass', Ojibwe *pāgämägan* 'club', 'war-club', 'cudgel', Cree *pākämägan* 'mallet', 'hammer', 'club'; from the root *pāk* 'to hit', 'strike'.

tockahack (*takähâk*) and defines as a 'pickaxe'. This implement, which Smith describes as being made of the "horne of a Deare put through a peece of wood in forme of a Pickaxe," was the common deer-horn war-club.[1] The word, which means 'striking utensil,' is cognate with the Massachusetts name for ax or hatchet, viz, *tokonk* (*tak'a"k*, abbrev. of *tak'a"kan*). The cutting of an object with a stone ax or hatchet was effected by a succession of blows in a slanting direction, a sort of chipping operation, as shown by the Narragansett term for a hatchet, viz., *chichegan* (*tchikhigan*), '(what) scrapes (lops off or prunes),' cognate with *tchikähikan*, the Cree name for an ax. When the Indians, says Beverley, "wanted any Land to be clear'd of the Woods, they chopp'd a Notch round the Trees quite through the Bark with their Stone Hatchets or Tomahawks,[2] and that deadn'd the Trees." The operation was completed by fire and a chopping away of the charred wood.[3] The name tomahawk, like several other Virginia words (such as raccoon, opossum, hominy, etc.), soon found its way to Massachusetts, and was erroneously applied by Wood (*New Englands Prospect*, 1634), who was ignorant of the form and function of the Virginia implement, to a war-club or "head-breaker," which he describes as a "stave of two foote and a halfe long, and a knob at one end as round and bigge as a foote-ball." Wood's description (which fits that of the Iroquois *gajewa*, a heavy club about two feet in length, made of iron-wood with a large ball or knob at one end) was

[1] Capt. Arthur Barlowe, in his letter to Raleigh (1585), describes this weapon thus: "They [the Southern Renape] have besides a kinde of club, in the end whereof they fasten the sharpe hornes of a stagg or other beast." (Hakluyt, *Voyages*, III, p. 250.)

[2] Beverley, in another place, describes a visit made to a Virginia Indian house of worship in which he found, carefully wrapped and sewed in mats, "some vast bones," and some Indian war-clubs "finely grav'd, and painted." The war-clubs, which he unaccountably styles "tomahawks," were, from his description and figures, undoubtedly weapons captured from the Massawomeks (Iroquois), and the bones those of one or more of the Susquehanoks (Iroquois), whom Smith describes as men of gigantic stature. Both the bones and war-clubs had doubtless been carefully wrapped in mats and preserved in a house of worship as relics of a battle in which the Renape had been victorious over their deadly enemies, the Iroquois.

[3] According to Hariot (1588), the Southern Renape, in the manufacture of their canoes ("dug-outs") from *rakiock* (*rokiak*, 'soft wood'; the wood of the bald cypress), employed in the process fire, stone hatchets, and shells. The shells used were possibly those of species of *Unio*, and the name of which, according to Strachey, was *tshecomah* (*tshikaman*, 'scraper').

plagiarized by Josselyn in his account of *Two Voyages to New England*, 1674; while Gookin, writing about the same date, describes a tomahawk as an instrument "made of wood like a pole ax with a sharpened stone fastened therein."[1] Another New England writer, Church (*Philip's War*, 1716), applied the name to a "wooden cutlass." The word "tomahawk" is, however, as above stated, of Virginian origin, since a vocable cognate with Virginia *tämähâk* would have had, in the Massachusetts dialect, the form of *tûmäha"k*, which would have been written *tumhonk* by the English. The names for a stone ax or hatchet in all the Eastern Algonkian dialects (except Massachusetts and Narragansett), were coradicate, but not cognate with the Virginia word under consideration: Pamlico *tämähik;* Lenape, *tëmähikan* or *tûmähikan;* Abnaki, *tëmähigan;* Mohegan, *tûmähikan;* Micmac, *tûmigûn*. Each of these words (from the Eastern Algonkian root *tëm, täm, tûm*, 'to cut') means '(what) cuts' (an inanimate object understood), while *tämähâk* signifies '(what is) used for cutting,' any kind of an object, animate or inanimate. Previous to the publication of Smith's *Map of Virginia*, the Indians of Virginia had been supplied from England with small iron hatchets[2] of inferior quality manufactured for trade purposes, and to which, naturally, they transferred the name of the stone implement which the metal one superseded. Subsequently, similar iron hatchets were introduced among other Eastern Algonkians as well as Iroquoians, all of whom, after the manner of the Virginians, applied to these implements the name of the stone ones which they had used for similar purposes (Algonkian, *tëmähigan* and its cognates, and Iroquoian *atokea, atoken, odogun, oskwesont*, etc.). It is therefore to the iron hatchet of the white man's manufacture and the adopted Virginia Indian name which English-speaking people everywhere applied to it, and not to the stone implement, that is due the widespread fame which this formidable implement of

[1] Gookin's description of Indian weapons, which is only a general one, bears evidence of having been written from information derived from reading Smith's *History of Virginia*. His description of a tomahawk is not very far from being correct, since a pole-ax is merely an ax with a longer helve than usual, and in the Indian instrument a stone head was substituted for an iron one.

[2] "Of the same forme," says Smith, that is, of the same general shape, as the stone hatchets that supplanted them

aboriginal warfare acquired. The tomahawk, except in actual war, was worn in the girdle, behind the back. It was used by the Indians with terrible effect, and also thrown by them with unerring precision at distant objects, and made to revolve in the air in its flight.

(1) With the Indians the tomahawk was the emblem of war itself. To bury it, meant peace; to dig it up, meant to declare the most deadly warfare. Hence the phrases "to bury the tomahawk," and "to dig up the tomahawk," sometimes used by writers and public speakers with reference to the settlement of past disputes or the breaking out of new ones. (2) TOMAHAWK (vb. tr.) — To cut or kill with a tomahawk. (3) TOMAHAWK RIGHT. — An inferior kind of land title, secured in the early period of the settlement of Virginia, "by deadening a few trees near the head of a spring, and marking the bark of some one or more of them with the initials of the name of the person who made the improvement. (4) TOMAHAWK PIPE. — A tomahawk with a hollow stem and a bowl at the back of the head adapting it for use also as a pipe.

TOMAHACKS. Axes. — Smith, *Map of Virginia* (1612). "The weopons they use for offense are Bowes and Arrowes with a weopon like a hammer and ther Tomahaucks:" — Spelman, *Relation of Virginia* (about 1613).

"Iron TOMAHAWKES or small hatchets." — Hamor, *True Discourse of the Present Estate of Virginia* (1615). TAMOHAKE, TAMAHAAC.—Strachey, *Historie of Travaile into Virginia* (about 1616). TAMAHAUKES [war-clubs].—Wood, *New Englands Prospect* (1634). TAMAHAWKS [war-clubs]. — Josselyn, *Account of Two Voyages to New England* (1674). Stone Hatchets or TOMAHAWKS. — Beverley, *History of Virginia* (1705). " . . . his men pull'd their TOMAHAUKS or Hatchets from under their Matchcoats, and kill'd several." — Lawson, *A New Voyage to Carolina*, p. 200, 1709. TOMHOG, or wooden Cutlash. — Church, *Philip's War* (1716). ". . . hatchets (which the Indians call tomahawks)." — Byrd, *History of the Dividing Line* (1728).

NEW YORK CITY.

SOCIOLOGY OF THE CHINGALEE TRIBE, NORTHERN AUSTRALIA

By R. H. MATHEWS

In an article contributed to the Anthropological Society of Washington in 1900,[1] I published a table showing the eight intermarrying sections of the Chingalee tribe, which occupies an extensive tract of country about Powell's creek and Newcastle waters, in the Northern Territory, a name given to the northern portion of South Australia. In 1905 I contributed another paper,[2] in table II of which I gave examples of marriages which I distinguished respectively as Nos. 1, 2, 3, and 4 wives.

During 1906 I completed some further investigations which enable me to report that among the members of the Chingalee tribe, the name of the section of a given individual is amended or changed altogether when he or she has passed through the ordeal of initiation. I will explain the circumstances which led up to this important discovery, which has never before been reported. For some years past I have been collecting details of the sociology of several tribes in the Northern Territory, Western Australia, and the northwest portion of Queensland, by means of correspondents resident in various places in the regions mentioned. I was frequently puzzled to find that a correspondent in one part of a tribe's domain would send me the names of the eight sections with full particulars of their intermarriage and devolution, whilst another equally capable informant in another part of the hunting grounds of the same tribe would send me a set of eight sections, varying more or less in the form of the names, but exactly the same in all other respects. I concluded that there must be some reason for this difference, and asked my friends to make independent inquiries from different individuals in the same locality, as well as from old and

[1] *American Anthropologist*, N. S., II, pp. 494–501, with map.

[2] Ibid., VII, pp. 303–304.

young members of the same tribe. After a good deal of patient work on the part of my correspondents and myself, we found that children of both sexes had a somewhat anomalous sectional nomenclature compared with that of the adults.

It was among the tribes about Hall's creek, in the Kimberley district of Western Australia, that my attention was first arrested in regard to these apparent irregularities. One correspondent gave me Chauarding for a section name which evidently corresponded with Jungary of the table sent by another inquirer, and so on. I at length succeeded in obtaining tolerably full confirmation of my conclusions, and am now able to supply an example of the variations in the section names of the Chingalee tribe.

TABLE I

Cycle	Masculine Section Name		Feminine Section Name	
	Before Puberty	After Puberty	Before Puberty	After Puberty
A	Chukala	Chungalee	Ongalla	Nungalee
	Chulamah	Chula	Arlinginyu	Nala
	Tapala	Taralee	Ehralee	Naralee
	Chupadee	Tungaree	Ambadee	Nungaree
B	Chakadē	Chimitcha	Narbeeta	Namitcha
	Chunamah	Chuna	Ahmana	Nana
	Tampalillee	Champachina	Nabachakadu	Nampachina
	Chumadē	Chemara	Chupadinnee	Nemara

I will leave the above table to speak for itself and pass on to show analogous differences in the section names of some tribes in the northwest districts of Queensland. In an article presented to the Anthropological Society in 1899 I published a table of the adult forms of the eight intermarrying sections in the locality mentioned, and I ask the reader to refer to that table.[1] Among the blacks therein represented, Narachoo is used from birth to puberty instead of Burralanjee; Blaniwoo instead of Bolanjee; Boonongoona instead of Kommeranjee; Warkee instead of Narrabalanjee; and Thimmermill is the juvenile form of Yakamurri.

[1] *American Anthropologist*, N. S., 1, p. 596; *Jour. Roy. Soc. N. S. Wales*, XXXIII, p. 111.

In another paper published in this journal in 1900 I submitted a table showing the adult forms of the eight sections of the Lunga and other tribes in the Kimberley district of Western Australia, to which the reader is referred.[1] In these tribes we find that the adult form of the section name Jakara is known as Changarra from birth to puberty; Janima is Chau-an; Jungary is known as Chau-arding; and Julimar is called Chu-a-ru until puberty is reached.

Among the tribes mentioned in both the preceding paragraphs, there are two forms of all the male and female section names, the same as in the Chingalee.

Referring further to the Chingalee marriage regulations I would like to state that when Spencer and Gillen visited that part of Central Australia they prepared a table to the effect of the one given below.[2] The sections which marry one with another and the denomination of the resulting offspring are of course identical in all respects with the information given in my tables published in this journal,[3] but Spencer and Gillen arranged the sections differently in their table, for the purpose of making them fit in with paternal descent.

TABLE II

Moiety	Husband	Wife	Offspring
Willitji	Chimitcha	Chungalee	Taralee
	Chuna	Chula	Tungaree
	Tungaree	Champina	Chuna
	Taralee	Chemara	Chimitcha
Liaritji	Chungalee	Chimitcha	Champina
	Chula	Chuna	Chemara
	Chemara	Taralee	Chula
	Champina	Tungaree	Chungalee

Spencer and Gillen profess to have discovered that the first four names in the "husband" column are called by the collective name of *Willitji*, and that the remaining four men in that column are known collectively as *Liaritji*, thus constituting two independent moieties,

[1] Op. cit., N. S., II, p. 186.

[2] *Northern Tribes of Central Australia*, p. 100.

[3] *American Anthropologist*, N. S., II, p. 495, with map. Ibid., VII, pp. 301–304.

in each of which the fathers are said to transmit their moiety names to their sons from generation to generation. This succession holds good only while the four men of a so-called moiety marry No. 1 or No. 2 wives; when we come to the progeny of No. 3 or No. 4 wives the succession of the men collapses altogether.

For example, let us suppose that each of the first four men in the "husband" column of the above table marries a No. 3 wife. Then we shall find that Chimitcha marries a Chuna woman and has a son Chemara; Chuna espouses Chimitcha and has a son Champina; Tungaree weds Taralee and his son is Chula; and Taralee marries a Tungaree wife and his son is Chungalee. These four sons belong to the moiety Liaritji, as we see by the table, instead of to the Willitji moiety like their fathers. If the four "husbands" of our example had married No. 4 wives the result would have been the same.

It is evident that half of a man's possible wives and half of his possible families would belong to the Willitji moiety, and half his possible wives and families to the Liaritji moiety — the section and the moiety of the children depending altogether upon the mother in every case that can possibly occur. We have therefore demonstrated that the four "husbands" of our example are sometimes the fathers of Willitji children and sometimes of Liaritji children, according to the women whom they marry. Moreover, for incontrovertible evidence of the custom of marrying the four kinds of wives which I have described as Nos. 1, 2, 3, and 4, the reader is referred to the list of living examples of such marriages reported by me in a previous communication.[1]

Whatever may be the signification of the terms *Willitji* and *Liaritji* it is abundantly clear that they cannot be the names of two independent moieties, because as shown above the sons of Willitji men are liable to be scattered at random through all the sections of the entire community. The partition of the tribe into two parts, Willitji and Liaritji, utterly fails either to prove descent of the sections through the men or to establish exogamy of the moieties.

Spencer and Gillen assert that the eight sections of the Warra-

[1] *American Anthropologist*, N. S., VII, pp. 303–304. See also other lists in other publications.

monga tribe are divided into Uluuru and Kingilli; that the Umbaia are divided into Illitji and Liaritji; that the Wargaia are divided into Uluuru and Biingaru; that the Bingongina are divided into Wiliuku and Liaraku, and so on.[1] Examination of the tables given by the authors in all of these tribes fails to prove that a single one of the so-called "moieties" has perpetual succession through the men or through any other channel, without which any bisection of a tribe must fall. I have elsewhere spoken of these tables as "un mélange confus et hétéroclite."[2] The classification of the women into two sets or cycles as exemplified in my table of 1900, already cited, is the only division known to me in which each set has immutable succession within itself.

Another table can be formed by taking a category of four sections of women from among whom four specific sections of men are bound to obtain their wives, whether of the No. 1, 2, 3, or 4 designation. Such a table has previously been given in this journal,[3] to which the reader is referred. That table does not, however, profess to exhibit a partition of the tribe into two independent portions. The quartette of men do not reproduce themselves in the next generation; neither do the quartette of women. All that is aimed at in the table of 1905 is to bring together the four different sections of men and women who can marry one another, and enable us to see at a glance who are the potential conjugal mates of any given man or woman. Further study of the subject will reveal to us that my table of 1900 does not illustrate exogamy; neither does my table of 1905; neither does Spencer and Gillen's table. It is therefore obvious that notwithstanding our repeated attempts to divide a tribe into two such parts that the men of one part shall marry the women of the other part, and such women only, we are met with disappointment in every case. The conclusion therefore seems inevitable that there is no absolute exogamy in any of the tribes under discussion.

PARRAMATTA,
NEW SOUTH WALES.

[1] *Northern Tribes of Central Australia*, pp. 101 and 102. From information supplied by reliable correspondents I had previously reported the intermarrying sections of all the tribes mentioned.

[2] *Bull. Soc. d'Anthrop. de Paris*, VII, série V, p. 173.

[3] *American Anthropologist*, N. S., VII, p. 302.

PROCEEDINGS OF THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON

Meeting of February 18, 1908

At the 414th meeting, held February 18, MISS FRANCES DENSMORE read a paper entitled *Music of the Chippewa*, using as illustrations many phonographic records obtained by her during a season's work for the Bureau of American Ethnology among the Chippewa of Minnesota. Miss Densmore said that the music of the Chippewa is an echo from the land of the pine trees, the lakes, and the little hills. All their life is intertwined with music: from babyhood to death the songs of the people express the joys and sorrows of life, the exultation of war, the solemnities of their religion, the tenderness of love and the cradle songs, farewells to the warrior, and dirges for the departed. Miss Densmore gave a cradle song, an invitation to a ceremony, a plaintive love song, the requiem of chief Flatmouth, the song of Man-ah-bo-zho who wrung the ducks' necks, and a series of songs of initiation into the Grand Medicine Society, which latter ceremony was described in some detail. At the close of Miss Densmore's paper three Chippewa Indians visiting Washington gave a representation in costume of the initiation of a candidate for membership in the medicine-lodge, and the effect of the songs, accompanied with the rattle and drum, was very striking. The chief also made a speech laudatory of his white friends in Washington, the Reverend J. A. Gilfillan interpreting. The paper was discussed by Miss Fletcher and Mr Wead.

Meeting of March 3, 1908

The 415th meeting was held in the assembly hall of the Cosmos Club. The paper of the evening was by MR GEORGE R. STETSON, on *The Industrial Classes as Factors in Racial Development.*

Mr Stetson said that the factory system is of great antiquity. Established in England during the Roman occupancy, the employees were servile and the processes manual. Free labor and motive power were introduced in the middle of the eighteenth, and the modern factory system with steam power in the nineteenth century. The cruelty and misery, the excessive hours of labor, the gross neglect of hygiene and sanitation, aroused public opinion, and in 1802 Sir Robert Peel introduced

into Parliament the first sanitation act. In 1906, the approximate number of persons employed in factories, laundries, and workshops exceeded 5,000,000. Of all employed in textile factories, 71 per cent. were women and children. In certain industries men are banished, women and children demanded, and the demand is supplied at the cost of physical and moral deterioration.

Mr Stetson enumerated various occupations that are dangerous to the health of the operatives. In the weaving sheds, where artificial humidity is produced, the air sometimes contains 34.6, 39.6, and 41.6 volumes of carbon dioxide per 1,000, although the law allows only nine volumes per 10,000 of air. Very few mills are in good sanitary condition, and the result of the conditions and the employment is to lower the weight, stature, and health of children, and the general health of all the operatives.

As an indication of the deteriorating effect of factory life, of the 42,613 children under fourteen years of age examined by the surgeons for certificates of fitness for work, the large mill towns furnished 61.22 per cent. of the rejections between the ages of thirteen and fourteen years. An official report concludes: "Human life in England is being sacrificed to the factory and workshop." Overcrowding and unhealthful housing are great evils, and the principal causes of vice and disease. The death-rate in the manufacturing towns is two and a half times larger than in the rural districts of the same county. In Sheffield the infant death-rate is 234 per 1,000, and in other localities the conditions are equally deplorable. That racial vitality and mentality is being gradually enfeebled in the urban, factory, and workshop population of England is generally conceded. The mechanizing and enervating influence of machinery is recognized by the English inspectors and by all others who have made the factory system a subject of observation or study.

In concluding, Mr Stetson remarked that the factory system as at present conducted does not create skilled and intelligent workmen, affords no opportunity for intellectual development or educational acquirement, and is powerless in training men to be its directing forces, while the limitation of age and the ignorance of a trade tend to the increase of pauperism and dependence.

The paper was discussed by Professor W. H. Holmes, who said that in a small way much has been done to protect the worker, but to secure ideal conditions is difficult, and that there would probably always be a certain amount of deterioration. By Dr Aleš Hrdlička, who remarked that the employment of children is the chief source of danger, because the seeds of disease are implanted at a period when the body is undeveloped.

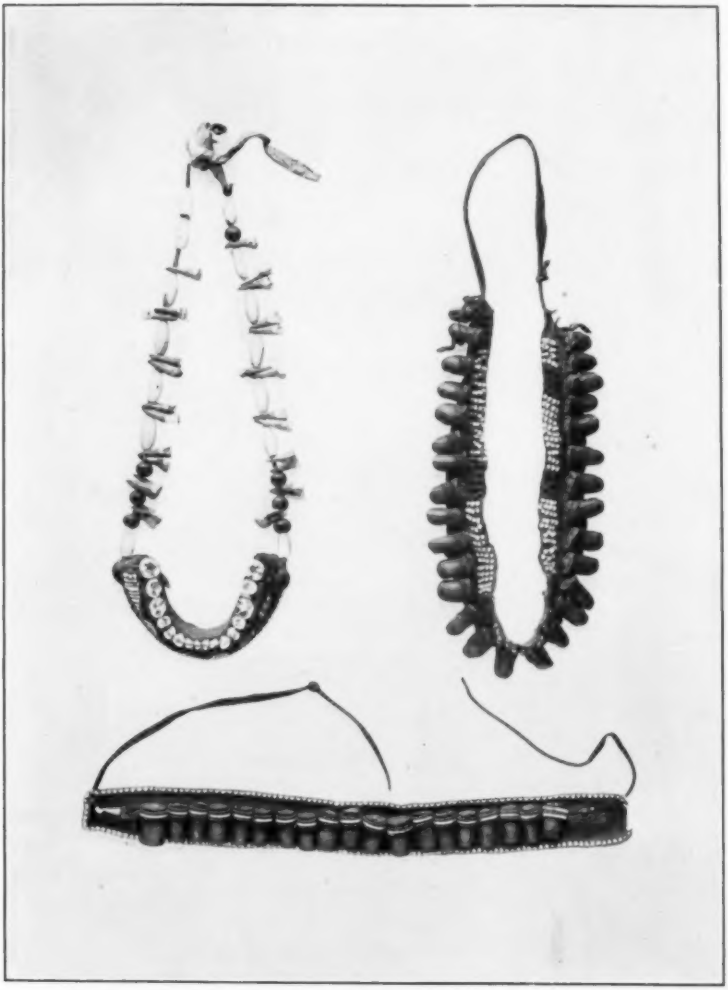
By Major Clark, who expressed the opinion that child labor is not an unmixed evil, and that it is chiefly a sanitary question. By Mr Robinson, who suggested old-age pensions as a means of avoiding pauperism.

Meeting of March 17, 1908

At the 416th meeting a demonstration of Indian trophies consisting of parts of the human body was made by the President and the Secretary.

Dr Aleš Hrdlička exhibited a specimen, thus far unique in the collections of the United States National Museum, consisting of a string of beads and human teeth attached to a human lower jaw partly covered with decorated deerskin, the whole forming a necklace (pl. xv). The specimen, recently transferred by the Army Medical Museum to the National Museum, was collected among the Navaho, about 1865, by Dr B. A. Clements, U. S. A., and was said to consist of the lower jaw and teeth of a fallen enemy; but as such trophies have been observed on no other occasion among the Navaho, there is some doubt whether the necklace was made by a member of that tribe. The use of bones and of other parts of the human body was extensive among many primitive peoples, including the Indians (see *Smithsonian Report for 1906*, p. 423–438). The motives were of four classes: (1) Bones of relatives were preserved among some tribes, for a time at least, as an expression of piety or in pursuance of tribal custom; (2) The head, scalp, limb, jaw, or other part of the body of a slain enemy was preserved as a true trophy, as evidence of the owner's or his party's prowess, as a matter of pride, personal satisfaction, or compensation for previous loss; (3) The skull or other part of the body was believed by some Indians to impart to their possessor certain desirable qualities of the individual from whom it came, or to give the later owner a dominant power over the spirit of the former; or (4) the relic was a charm, or fetish, with supernatural power, and as such was useful or even necessary in ceremonies, curing, gambling, etc. The necklace here mentioned belonged in all probability to the last category and very likely had been the property of a medicine-man.

The Secretary exhibited two necklaces made of the first joints of human fingers fastened to a beaded band of leather (pl. xv). They were both collected by Surgeon Clements and came from the Apache and Ute Indians respectively. Their history is unknown, but the Apache necklace may be the one mentioned by Mr Edward Palmer in his notes on an engagement with those Indians in Arizona during 1865, and referred to by Mr W. E. Safford in the second paper of the meeting. This necklace consists of twenty-nine finger ends mounted on a band of human



OBJECTS DECORATED WITH HUMAN TEETH, JAW, AND FINGER ENDS

skin and bordered with vertical rows of rather large black and white beads. It has been worn about the neck, as the band has accumulated a coating of grime from contact with the skin, and the indications are that it was tucked beneath the hunting shirt except on extraordinary occasions.

The Ute necklace consists of a band 12½ inches long, and also apparently of human skin. White beads like those used on the Apache necklace are set on the edge, and each nail joint is ornamented with three lines of white and blue beads, applied at the base of the nail. A few of the nails have horizontal grooves cut across them. This necklace shows an esthetic treatment that is absent in the Apache specimen, and is comparable with the Cheyenne finger necklace figured in plate LV of the *Ninth Annual Report of the Bureau of Ethnology*. Attention was called to the citations by Capt. J. G. Bourke, U. S. A., in this report, showing the wide prevalence of the use of human relics in America and the ideas connected therewith.

MR W. E. SAFFORD read a paper entitled *The Explorations of Edward Palmer*. Mr Safford characterized Edward Palmer as one of the greatest collectors that America has produced, and said that the portions of his labors shown by the entries in the catalogue of the United States National Museum would alone be enough for the life-work of one man. His collections in botany are enormous, and include many new genera and a great number of new species; but not less important are his gatherings in ethnology, archeology, and the other branches of anthropology; while biology, mineralogy, and other subjects have profited by his indefatigable energy as a collector. A Palmer specimen, said Mr Safford, leaves nothing to be desired as to complete data. Edward Palmer is now 74 years of age and is still actively at work. As a youth of sixteen he embarked on the ship *Water Witch*, which sailed in 1853 for Paraguay, bearing members of an exploring expedition sent out by the United States. He ascended the Paraná and Paraguay and made collections of botany, etc. In 1861 he collected in the Geological Survey of California, and at the outbreak of the Civil War came to Washington and was made assistant surgeon. In 1865 he was detailed as medical officer at Fort Whipple, Arizona, and later occupied a similar position at Camp Verde in the same territory. Wherever he was he utilized his spare time in collecting, and, as an illustration, said Mr Safford, while on an expedition against the Apache, took part in an engagement in which twenty-two of these Indians were killed, and subsequently ransacked their camp for ethnological specimens. After extensive travels in the Southwest, Mr Palmer spent several seasons in eastern United States; later he en-

tered the Mexican and West Indian fields, where, up to the present, he has continuously worked, bringing out yearly material of the highest interest and value to science.

The Society at this meeting elected to honorary membership Dr William L. Abbott, on whom the mantle of Mr Palmer's unquenchable enthusiasm has fallen and who at present is contributing enormously to the National Museum from the rich stores of Malayan biology and anthropology.

Meeting of March 31, 1908

The 417th meeting, held March 31, was addressed by the HONORABLE FRANCIS E. LEUPP, Commissioner of Indian Affairs, on *Some Side-lights on Indian Administration*. Mr Leupp said that in dealing with the Indians the Government as a rule has gone too fast, has been too greedy of results, and has failed to gain an understanding of the Indian habit of thought. It stands to reason that we cannot civilize with a club, and attempts to force matters beyond the normal rate of the adaptiveness of the Indian is to court failure. The present policy of the Indian Office is to limit attempts at progress to what the Indian can understand. As an example of the rational methods now pursued, Mr Leupp recounted the history of the recent troubles at the Hopi pueblo of Oraibi, Arizona.

Mr Leupp considered the subject of the Ute migration of 1907 from Montana to South Dakota and related the methods employed by the Indian Office to convert a dangerous situation into one that worked to the advantage of the Indians in teaching them the benefits of labor. He spoke also of the so-called Navaho outbreak of last year, when a desperate character induced six others to aid him in an attempt to carry off the agent. In this case troops were sent and some of the Navaho were put in jail.

In conclusion Mr Leupp detailed the advanced methods now in practice in regard to Indian schools, and in passing said that the Government had begun wrong end foremost by establishing higher schools and introducing the "frills" of boarding schools. Now schools are being brought near to the pupils, and the day-schools have buildings constructed on sanitary principles; the small children are not allowed to go hungry, and the parents are permitted to visit the schools freely. "Schools," said Mr Leupp, "are to awaken the conscience of the white man toward the Indian."

In discussing Mr Leupp's paper, Dr Hrdlička said that much of the distrust with which the Indians regarded the schools was due to insanitary arrangements at the old schools; as a result the children were often sent home afflicted with disease. Too many school duties and a lack of

regulated systematic exercise were said by Dr Hrdlička to be the cause. These conditions exist in some of the Indian schools and can be easily remedied. Hygienic instruction is important. Irrespective of this, Dr Hrdlička viewed with favor any plan to extend nature studies among the Indian children.

Professor Holmes expressed great satisfaction in the paper of the evening. He regarded Mr Leupp's views as correct, and expressed hopefulness that we shall see our way through. Professor Holmes asked what data the Indian Office has collected concerning the Indian family, and customs of inheritance. Mr Leupp replied that each agency has a family record, but it is difficult to trace relationships because many of the Indians have acquired several names; to obviate this difficulty the Office has given arbitrary names; also in signing agreements, papers, allotments, etc., the finger-print system is used.

Dr Swanton presented the need for genealogical tables of the Indians for use in sociological investigation.

Meeting of April 14, 1908

Mr James Mooney presented a paper on *Race Factors in the Population of Ireland*, exhibiting a wall map and giving a geographical description of the four provinces and the royal district of Meath as a groundwork for his remarks.

Mr Mooney began with a résumé of the prehistoric remains of Ireland, especially of the megalithic structures. These, he said, are traced from southern Norway, south through the British Isles, France, Spain, and northern Africa, to Tunis, and on some Mediterranean islands; but in Ireland, as in other countries, it is unknown who were their builders. The mythic history of Ireland presents names of supposed peoples, which Mr Mooney said are names of nature gods only. With the Firbolg, said to be a dark stock, we have the first authentic colonization, these being divided into the Firbolg people, Firdamnon and Firgallian. The Gaelic Kelts next came, perhaps about the sixth century B. C., overpowered the Firbolg and drove them west into Connacht, where they finally disappeared in the third century A. D.

Mr Mooney traced the distribution of the Keltic stock from its native seats in central Europe into Italy, Spain, down the Danube, and north into the British Isles, and said that about 300 B. C. a stream of these people passed across Europe and became the Galatians in Asia Minor. The Gaelic tribes of Ireland remained with practically no admixture from foreign sources until about the ninth century, when the Scandinavians

began to descend on the island. In 837 these made the first settlement, and by 850 they had become established at various points along the coast. In 1014 Brian Boroimhe broke their power, but many of them remained as a component part of the population. The speaker observed that in contrast with the Scandinavian town-founding habit, the Irish were a pastoral people and did not build cities.

In 1169 came the Normans; then began the struggle that has lasted to the present day. With the Normans came some Welsh, and likewise a Saxon colony was founded in southeastern Ireland at an uncertain date, giving a slight infusion of this blood. The long and painful period during which the English efforts to colonize Ireland shifted and profoundly changed the population was broadly sketched, and the displacements shown by frequent references to the map.

Mr Mooney's interesting and lucid paper was discussed by the president, who said that physical anthropologists can find no traces in Ireland's present population of the Mediterranean or Iberian types as history leads us to expect. In answer Mr Mooney said that there was little of Mediterranean or Iberian race in Ireland, the early colonization being Alpine.

The other paper of the evening, entitled *The First Fire*, was presented by Mr C. H. Robinson, who said that his endeavor would be to suggest merely the possible ways in which man became acquainted with the uses of fire. To this end the speaker traced the adventures of a group of early manfolk from the discovery by them of a fire kindled by lightning, the rude experimentation through which some of its properties were ascertained, its adoption as properties from animal enemies and the subsequent quasi accidental discoveries of its use in chipping flint, hardening and sharpening spears of wood, cooking, etc., as well as the consequent effects in determining social organization, etc.

Meeting of April 28, 1908

At the 419th meeting of the Society Dr Ainsworth R. Spofford read a paper entitled *Facts and Causes of Emigration*.

In his opening remarks the speaker traced the history of emigration from the time of the early migrations, which had as their causes race hatred, political intolerance, and religious persecution, to the great voluntary movement of the nineteenth century to this country. There have been great migrations, said Dr Spofford, but never like this where twenty-five millions of human beings have swept into America to better their condition. Dr Spofford reviewed all aspects of the great subject

of the population of America from the time the emigrants embark on the great transatlantic steamers to the time when they become component parts of our heterogeneous nation.

He spoke of the elements of the population that are regarded as the most valuable, as the English, German, Scandinavian, etc., and discussed the racial elements that have entered the country of later years. The *pro* and *con* of the desirability of restricting immigration were impartially given by Dr Spofford, from the arguments of the anti-immigrationists to those of the class who believe that it would pay the Government to furnish passage free to incomers.

The paper was discussed by the president, by Major Clark, Mr Robinson, and Mr Wead.

Meeting of May 12, 1908

At the 420th regular meeting MISS ANGEL DE CORA, of the Carlisle Industrial School, read a paper on *Indian Art — Its Present and Future*, exhibiting a large number of examples of the handicraft of her pupils at Carlisle. Miss De Cora said in part that the simple forms and figures of Indian art revealed the influence of the surroundings of the Indian on his daily life, and it mattered little whether his symbols resembled the objects they represented. His aim was to picture his thought, which he did on the material at hand; his skin, garments, and utensils. His pictorial arrangements tended to develop his decorative sense and gradually sacrificed all other ideas to the purely decorative. The Indian artist made his symbolism simple, seldom attempting realism — to convey the idea of buffalo, he made conventional figures of that animal, as head, horns, or hoofs to represent the whole. The strength of Indian designing lies in its simplicity of forms and arrangement. "I have been told by old people," said Miss De Cora, "that before the days of the white man, their decorations were mostly symbols of human life, animal forms, and the broader aspects of nature. The conventionalized leaves and flowers employed in Chippewa beadwork are due to the white man's influence. This style of designing is spreading among the Indian tribes, as it is supposed to be pleasing to white customers."

The Indian art of today is but a memory of the old life. The designer still employs the symbolic figures, but they have lost their original significance and they are used only on such articles that the Indian clings to.

"My work at Carlisle," said Miss De Cora, "has been to encourage the school Indian to keep up his native art. It was uphill work at first,

for my pupils are all young people, most of whom have spent their days at school and have had little or no home influence. I ask my pupils to make a design for a frieze or wall decoration, also borders for printing, and designs for embroidery for rugs. The ones who respond to my request are the full-bloods, and they lead the rest on in the work. Thus we transplant the old ideas in new ground and the work increases in interest.

"I have come to the conclusion that though the pupils represent various tribes and each works according to his tribal style, they show in their work much that is in common in form and color; and under this conviction I make experiments. I have taken the best of the designs and studied and analyzed them, and in the process I have singled out four simple forms, the straight line, the square, the triangle, and the terrace. These I draw upon the blackboard, explaining to my class that they were the foundation of Indian design and pointing out that nearly every design contained four fundamental figures. I requested each one to make an original design on the basis of the four figures, and the result was, to say the least, most gratifying, and I believe we can establish a method by which we can keep up the Indian designing. So far, my efforts have been confined to the decorative art of the Middle West tribes, but I believe that, through the aid of some of our scientific students that of the Southwestern as well as the Alaskan Indian tribes could be studied and systematized in the same way for the Indians at Carlisle and elsewhere.

"We Indians think we can contribute something to American art, and in time I hope to train my artists sufficiently well that their work will find a commercial value in manufacturing concerns where good designs are needed. An Indian designer, professionally trained, would readily find employment where such work is in demand. One of the art schools in Philadelphia has already appreciated the value of Indian art to the extent of offering an opportunity to our Carlisle students who desire to be trained professionally. Painters and sculptors have long realized the picturesqueness of the American Indian, and immortalized him on canvas and in bronze. In the field of decorative art, if not in realistic art, let the Indian contribute his gift."

The paper was discussed by Mr Leupp, Mr Mooney, and others, and the audience examined with interest the many designs presented by Miss De Cora.

Meeting of May 26, 1908

The 29th annual meeting was held at the Cosmos Club on the above date. The report of the Secretary was read, showing the last year to have been a prosperous one.

The Treasurer reported receipts amounting to $431.14, and expenditures $234.71, leaving a balance of $196.43.

The Curator's report was presented, and the Society proceeded to the adoption of the new by-laws which simplify the organization by providing for a president, a vice-president, a secretary, and five councilors, who, with the past-presidents, constitute the board of managers.

The election of officers resulted as follows: President, Dr Walter Hough; Vice-President, Mr James Mooney; Secretary, Dr John R. Swanton; Treasurer, Mr George C. Maynard; Councilors, Messrs F. W. Hodge, C. L. Robinson, J. N. B. Hewitt, I. M. Casanowicz, and W. E. Safford.

Obituary notices of deceased members were read, as follows: Walter Hough on *Paul Edmond Beckwith;* O. T. Mason on *Crosby S. Noyes;* George C. Maynard on *John Hitz.*

The following corresponding members were elected during the quarter: M. Th. Volkov, St Petersburg; Prof. A. de Mortillet, Paris; Dr William Howard Turner, Philadelphia; Dr Alexander F. Chamberlain, Worcester, Mass.; Dr Roland B. Dixon, Cambridge, Mass.; Mr Charles E. Brown, Milwaukee, Wis.; and Mr George G. Heye, New York City.

Mr Ernest M. Bales, of the National Museum, was elected to active membership.

WALTER HOUGH,
Secretary.

BOOK REVIEWS

The Chilkat Blanket. By GEORGE T. EMMONS, *Lieutenant United States Navy. With Notes on the Blanket Designs, by* FRANZ BOAS. Mem. Am. Mus. Nat. Hist., Vol. III, no. 4. New York, December, 1907. 4°, pp. 329–401 ; fig. 535–592 ; pl. 24–27.

This is a book that every lover of the textile art would be proud to own and to which every student of its history should have access.

In the long perspective between the brush fence bounding the game drives or the primitive weirs of savagery and the Gobelin tapestries, the Chilkat blanket holds the middle place. It is the living survivor of the historic feather cloaks, of the exquisite technic in vicuña wool of Peru, the Mexican tapestries in vegetal fiber, and the old-time blankets of the North in goat's wool. To the student of culture-history the Chilkat blanket stands now at the threshold of all loom work, but the author will tell his own story.

During twenty years Lieutenant Emmons gave his vacations to the Northwest Coast Indian tribes, gathering specimens and information for his studies, and ransacking museums of the world for photographs of dancing regalia, blankets, and pattern boards, all of which last are reproduced in his book.

Three elements are said to enter into the blankets — the wool of the mountain goat, for woof and covering of the warp ; sinew thread from the caribou or whale, for uniting the divisions of the fabric ; and spun cedar bast, for the body of the warp.

The man hunts the goats and provides the yarn beam and the pattern board. The woman sweats the hide, plucks the wool, spins the two-strand cord for warp and woof, and makes ready for the weaving. All the processes are minutely described in the text, which is lighted up with legends and narratives and excellent drawings.

After the woof-yarn is spun, it is dyed, the warp is never. Only three colors were in the old times employed besides the natural white of the wool — namely, black, yellow, and bluish green. In the older blankets dyes were not used.

The loom is most interesting for its primitive simplicity. Two uprights resting in heavy wooden shoes, one broad cross-piece in which

small holes are pierced to hold up the work, narrow slats to keep the uprights from spreading, are all. The shuttle and harness are wanting.

The loom being set up, the warps are measured, cut, and hung over a narrow line of rawhide. The angular shape of the blanket's bottom is effected by carefully measuring the threads, and the warps are fixed in place for weaving by means of a row of two-strand and one of three-strand twine. The ends of the warps being counted off in sets are neatly tied in small bags of goat intestine, the usual hours of fasting are observed and all things are ready.

The woman seats herself in front of her work with her knees drawn up to her chin. She produces the designs from her pattern board, not by weaving across and back, but in strips and narrow fields, which are united by ingeniously interlocking their edges. Several color-fields may form divisions joined by means of fine sinew cord, and the lines of union are neatly concealed by three-strand twine or braid. In no part of the technic are two threads of different colors used in the same twining. It is interesting to note, throughout the minute description of the structural parts and the many technical processes, how the author's naval training has lent itself to the vocabulary of the Chilkat blanket. In his comparison of hand textiles (*Geflechtwerke*) with loom-work (*Gewerbe*) Lehmann coins new terms; not so the Lieutenant. His bends, reeves, strands, lacings, windings, coilings, half turns, and many more seem to answer naturally to the demand, only you have to be up in the sailor lingo a little to follow him.

At the close of this faithful and delightful technical description and narrative, Professor Franz Boas, who had also studied the decorative, symbolical side of this Northwest Coast graphic art, aided by Dr John R. Swanton, joins the author in a chapter on the blanket designs presented in his superb collection of photographs. The patterns, which look like a lot of eyes and mouths grinning at one from all directions, are transferred from boards painted by the men, as previously stated. But the same abbreviated symbols are found in carvings on silverware and food dishes, as well as in paintings on boxes and garments. The question is raised as to the order of priority among carvers, painters, and weavers. Dr Boas has "the clearest evidence that the blanket pattern is merely a painted design, which is transferred without any change to the technic of the weaving." Behind this copying, however, lies the long perspective of compromises between the painter, the carver, the engraver, and the weaver. In figures 553–558 (28 drawings) a flood of light is thrown on this particular study of relationships. The fact is clearly brought out

that more than one blanket has been copied from the same pattern board and that the twenty-four Emmons blankets are divided by their patterns into two groups. The narrower lateral designs also have their standard motifs. The pictures in all these forms of Northwest Coast decorations are made up of "design elements," which have been carefully gathered by Lieutenant Emmons, numbered, named, and illustrated (fig. 559). In the elaborate discussion of these elements and their functions, Professor Boas is convinced that the patterns have drifted out from the literal, have become fixed in their essential features, and attempts to represent specific animals are very limited. The patterns remain the same, no matter what animal is represented. Professor Boas, with Lieutenant Emmons and Doctor Swanton as his guides, goes minutely into the discussion of the blanket types one by one. Each pattern board, blanket, dancing apron, shirt, and legging in the whole Emmons collection is then beautifully illustrated, deciphered by Emmons and Swanton; and then examined in detail by Boas singly and comparatively as to designs, arrangement of pattern elements, variations, and colors. Four plates, two of them colored, finish the priceless monograph.

OTIS T. MASON.

Nova Guinea. Résultats de l'expédition néerlandaise à la Nouvelle Guinée en 1903 sous les auspices de ARTHUR WICHMANN, *chef de l'expédition. Vol. III. Ethnography and Anthropology*, by G. A. J. VAN DER SANDE. Surgeon Dutch Royal Navy. Leyden: Brill, 1907. 390 p., 50 pl., 216 figs., map.

This well-printed, beautifully illustrated and adequately indexed volume treats of the natives of New Guinea under the following heads: Food, drink and delicacies; clothing and ornament; habitations and furniture; hunting and fishing; agriculture; navigation; trade and communications; industry; arms; customs and government; art; religion; anthropology. Throughout, Dr van der Sande's own investigations and observations are compared and correlated with those of other travelers and ethnologists — the bibliography (pp. 364–373) contains nearly 300 titles. The illustrations and the text are also admirably arranged for purposes of exact reference. Material is here afforded for the correction of many misstatements and partial truths of explorers and ethnologists. On page 1, e. g., we learn that in the regions of Dutch New Guinea under consideration the so-called "edible earth" is used as a pigment, and not as either food or medicine; and at pp. 353–354, "it is shown once more that the Papuan is by no means everywhere dolichocephalic, as still taught by

Keane and Deniker." The vegetarian habits of the natives have also been exaggerated, although in the case of the common people animal food is a luxury. Abstentions from the eating of pork may be relics of totemism, but for the fact that blacksmiths practise such a taboo the author suggests "an imitation of the Mohammedan blacksmiths to whom the people are indebted for the smith's craft." The following statement (p. 13) is interesting in view of certain widespread misinformation of a general character: "The Papuan from Humboldt Bay to the Amberno River does not know any kind of stimulating drink. He best likes the milk from the cocoanut and ordinary river or well water, and fortunately has no liking for our fermented liquor or spirits." This is quite different from the abuse of palm wine among the natives of Geelvink bay.

In several places along the coast of New Guinea the use of tobacco was until recently quite unknown. In most places the Papuans (like the Malays) "appear to find the tobacco too strong to chew unmixed." Often the cigarette, like the *siri* quid, is passed around, even to children. To draw the line between clothing and ornament among the most primitive people of New Guinea is very difficult. The influence of climate does not appear to any extent, and only on the wedding day does the bride put on her bark petticoat, which is really due to the Malay coast traders and navigators, as the Malay name for New Guinea, Papua Tălandjang ("land of the naked Papuans"), itself suggests. The penis-calabash of the men may be more ornament than shame-clothing. As to the tattooing, the author observes (p. 41): "A beautiful tattooing of a naked person creates in our mind the same impression as a beautiful dress." Among common motifs in tattooing are, for men, the fish-eye, forest-leech, hornbill, frog, mollusk, etc. The wearing of feathers and flowers in the hair is widespread. Wigs made of human hair are in vogue "in coast districts situated at such distances from each other that mutual intercourse is excluded" (p. 63) — such wigs being worn "in commemoration and adoration of blood or close relations." The so-called "combs" of the Papuans are used for scratching, not combing. Ornamental armlets are worn by men even more than by women, and, "righthandedness prevailing," the fixed armlet of the left upper arm serves as a place in which to carry all sorts of small articles. Among the types of dwellings in use among the Papuans are the one with the turtle-shaped roof, the pyramid-shaped, the house with a horizontal ridge-pole, etc. The *raison d'être* of Papuan pile-dwellings "may be looked for in the greater cleanliness and the better hygiene obtained in this way, but also in the greater security against man and beast which such a dwelling affords" (p. 129). The picture

(fig. 102) of the natives "making twine from Pandanus fibers" is interesting as an example of coöperative labor. At Lake Sentáni "fishing and repairing nets, as well as diving for fresh-water molluscs, are left to the women," but in some places at the right season fish is so abundant that men and children have to come to their assistance." At Lake Sentáni fishing with hook and line is not practised. Agriculture is chiefly the work of women, men going no further than to clear the ground. It is interesting to note concerning the carrying bags, which seem to be manufactured by the women, that on them is often found (carved *à jour*) the figure of the dog, which is here so often the companion of the women, to whom it seems more attached than to the men, who treat it less sympathetically. The characteristic and universal craft of New Guinea is a "dug-out," some of which boats are said to reach 60 feet in length. A curious commercial development in these parts is the trade in trunks and the sale by one village to another of the right to cut down trees for boat-making (p. 194). At Lake Sentáni there are "women's boats" and "men's boats." Important culturally is the trade between the western part of New Guinea and the East Indies (Ceram, Macassar, Tidore, Ternate, etc.). This trade even gave rise to Mohammedan settlements on the coast. The coasting trade (e. g., pottery of Point Moresby) is also significant. Among measures of value and currency employed are shells, dogs' teeth, stone adzes, boars' tusks, Trochus rings, stone hatchets, "antique beads," etc. These beads, which derive their value only from their antiquity, are probably of Chinese origin, as are also certain antique glass rings found at various points in the island. According to the author (p. 232), "already in early youth, the qualities of an all round clever workman are developed in the Papuan," and "in the social life of the Papuans the principle of division of labor has made as yet but little progress." Contrary to general opinion, the weaving industry (p. 237) does exist in certain regions of New Guinea, and the first weaving-frame to be described from the island was met with at Tarfia.

In Dutch New Guinea the method of arrow-release in vogue is the "archaic release" of Morse. In shooting, the belly is the point aimed at, whence the development of defensive girdles of bark. Among the Papuans observed by the author "young children, already at an early age, are given in charge of elder sisters; afterwards the education takes place in the school of practice, the boys participating in the work of the father, the daughters in the more numerous occupations of the mother. By this, children very early become as clever as their parents" (p. 265). In matter of play, the children are "entirely left to themselves" — the

author "never saw a father or a mother playing with the children." In Dutch New Guinea circumcision of boys is not practised, although known in certain other parts of the island. On Humboldt bay and at Lake Sentáni "before marriage absolute chastity is the rule" (p. 266). In several parts of New Guinea a "two children system" prevails. Married women also have sometimes (as, e. g., at Humboldt bay), their own property to which the husband has no right. The existence of "man-houses," on the one hand, in some regions, and of communal dwellings, on the other, in certain other regions, "replaces for the greater part family life" (p. 276). This is why "the ties between parents and their children on Netherlands territory are less tender than, e. g., in K. W. Land, from where touching examples are given." Respecting art, we are told (p. 283): "Every Papuan possesses a certain artistic sense, and all are accustomed to apply it. It is for this reason that no member of Papuan society makes art his sole means of existence." Nevertheless, "entire villages may possess a kind of monopoly of producing articles of native, technical art." It is a curious fact (p. 286) that "real picture-writing, — pictography, — recording events, and giving by a series of pictures a connected story of an event, does not appear to occur on N. G." But "the ornament of the Papuan represents a kind of writing, expressing ideas, and giving a legible form to thought," — the natives of Asé, e. g., termed the author's writing *ăne*, "ornament," and seemed "quite familiar with the idea of writing." The chapter on religion (pp. 286–314) is of special interest, particularly the account of the "temples," in which "the principal spirits reside," and where "the religious life is concentrated and uttered in various forms" (p. 290). According to the author, "What strikes one first on entering the temple is that the noisy behavior said to be characteristic of the inhabitant of Humboldt Bay, is not heard inside, and that, as a rule, the little that is spoken is soft, sometimes almost in a whisper" (p. 292). No special costume or dress, "no kneeling or crouching down as an act of veneration in front of the temple, or before the deities worshiped inside," are in vogue, and "bending of the head as an act of devotion is unknown in Papua Tālandjang." Inside the "temple" the sacred bamboo plates are kept. The proceedings inside are described at pp. 297–299 as witnessed by the author. These "temples" serve as puberty-houses for young men, and the presence or even near approach of women is tabooed. Open-air singing and dancing are common (p. 308), and, among the people of Mapār, "with their numerous dances which take place inside the house, men, women, and children are placed in separate rows, but dance all at the same time."

Chapter XIII (pp. 315–363) is devoted to (physical) anthropology. A larger use of the left hand than is customary with Europeans is noted (p. 316). The sitting attitude, with limbs crossed tailor-fashion, is not, as Deniker thinks, "an ethnic character of the Papuans." The Papuan seemingly "prefers pulling to pushing." The tribes farther in the interior "possess in a much smaller measure the characteristic of being noisy and laughter-loving" (p. 317). Meyer's mistaken report that the people of Arfak could not count beyond five is explained by "the fact that the fingers of both hands have the same name as the toes of both feet" (p. 321). The linguistic material, besides place-names and the appellations of all manner of objects, in this book consists of the numerals of several tribes, a vocabulary from Lake Sentáni, and briefer ones from Angádi, Nagramádu, etc. In this chapter a number of interesting physiological details are given. Altogether, the present volume furnishes an excellent *aperçu* of the Papuans of one region of the great island of New Guinea, with the data so arranged as to be readily accessible and usable.

ALEXANDER F. CHAMBERLAIN.

SOME NEW PUBLICATIONS

AMBROSETTI, JUAN B. Exploraciones arqueológicas en la ciudad prehistórica de "La Paya" (Valle Calchaquí — Provincia de Salta) campañas de 1906 y 1907. Publicaciones de la Sección Antropológica, Facultad de Filosofía y Letras, No. 3, 1ª parte. Buenos Aires: 1907. 8°, 278 p., 121 fig., map.

ARANZADI, TELESFORO DE. Problemas de etnografía de los Vascos. Extracto de la "Revista Internacional de los Estudios Vascos." Paris: Paul Geunther, 1907. 8°, 50 p., ill.

ARVELO, MARTÍN MATOS. Algo sobre etnografía del territorio Amazonas de Venezuela. Ciudad-Bolívar: Imprenta de Benito Jimeno Castro, 1908. 16°, 26 p.

BANDELIER, AD. F. The Indians and aboriginal ruins near Chachapoyas in northern Peru. [Reprinted from *Historical Records and Studies of the United States Catholic Historical Society*, v, pt. 1, New York, 1907.] 8°, 51 p., 13 pl.

BOAS, FRANZ. Second Report on the Eskimo of Baffin Land and Hudson bay. From notes collected by Captain George Comer, Captain James S. Mutch, and Rev. E. J. Peck. Bull. Am. Mus. Nat. Hist., XV, pt. 2, New York, 1907. 8°, 371–570 p., ill.

BRIGHAM, WILLIAM T. The ancient Hawaiian house. Memoirs Bernice Pauahi Bishop Museum, III, no. 2, Honolulu, 1908. 4°, iv, 194 p., 178 fig., 23 pl. ($3.25.)

CATHOLIC Wocekiye Wowapi. Published by Rev. Jerome Hunt O.S.B. Fort Totten, N. Dak.: Printed at the Catholic Indian Mission, 1907. 24°, 154, 53, [4] p.

Prayer book and hymnal in the Dakota language.

DIESERUD, JUUL. The scope and content of the science of anthropology. Historical review, library classification and select, annotated bibliography; with a list of the chief publications of leading anthropological societies and museums. Chicago: Open Court Publishing Co., 1908. 12°, 200 p.

DUBOIS, CONSTANCE GODDARD. The religion of the Luiseño Indians of southern California. Univ. of Cal. Pub. in Am. Archæol. and Ethnol., VIII, no. 3, p. 69–186, pl. 16–19, Berkeley, June 27, 1908.

J. G. FRAZER. The scope of social anthropology. A lecture delivered before the University at Liverpool, May 14, 1908. London: Macmillan & Co., Ltd., 1908. 8° (6d.).

GOMME, GEORGE LAURENCE. Folklore as a historical science. London, Methuen & Co., n. d. xvi, 371 p. (7s., 6d.).

GORDON, E. M. Indian folk tales, being side-lights on village life in Bilaspore, Central Provinces. London: Elliot Stock, 1908. 16°, xii, 99 p. (Price, 3*s*, 6*d*.)

Chapters on: The country and the people; Objects of worship and festivals; Agriculture; Curious remedies; Births and marriages; Death, burial, and the hereafter; Folk tales and proverbs; Snakelore, relics, and fossils; Miscellaneous items; The new religion.

HANS, FRED M. The great Sioux nation. A complete history of Indian life and warfare in America. The Indians as nature made them. Graphic descriptions of the social life, religious superstitions, habits, traits, customs, and manners of the wild Indians since the time of their discovery by Columbus, comprising the authentic accounts of their illustrious leaders, terrible battles, cruel massacres, daring exploits, heroism and marvelous fortitude. Vividly illustrated. Chicago: M. A. Donohue & Co., 1907. 8°, 575 p.

The book contains practically nothing of value or authority, although in his preface the author says: "My vast experience, aided by unlimited access to government and Colonial records, has enabled me to portray the Indian in a true light in every particular; so that this volume may rank among educational works of the highest order," etc.

HEWETT, EDGAR L. Les communautés anciennes dans le Désert Américain. Recherches archéologiques sur la distribution et l'organisation sociale des anciennes populations au Sud Ouest des États-Unis et au nord du Mexique. Genève: Librairie Kündig, 1908. 4°, iv, 107 p., 17 pl., 20 fig.

The author's thesis as Doctor of Sociology in the University of Geneva.

JAMES, GEORGE WHARTON. What the white race may learn from the Indian. Chicago: Forbes & Co., 1908. 8°, 269 pp., many ills.

JOYCE, T. ATHOL, and THOMAS, N. W. Women of all nations: A record of their characteristics, habits, manners, customs and influence. London, Paris, New York, Toronto and Melbourne: Cassell & Co., Ltd. [n. d.].

To be published in twenty-four fortnightly quarto parts, at twenty-five cents per part. Part I contains the Introduction, pp. 1–35; Polynesia (by A. Hingston), pp. 36–48. There are many excellent half-tone illustrations from photographs. The editors are fellows of the Royal Anthropological Institute of Great Britain.

KEANE, A. H. The world's peoples. A popular account of their bodily and mental characters, beliefs, traditions, political and social institutions. New York: G. P. Putnam's Sons, 1908. 12°, xii, 434 p., 271 ill.

KROEBER, A. L. A mission record of the California Indians. From a manuscript in the Bancroft library. Univ. Cal. Pub. in Am. Archæol. and Ethnol., VIII, no. 1, p. 1–27, Berkeley, 1908.

———. Ethnography of the Coahuilla Indians. Ibid., no. 2, p. 29–68, pl. 1–15, Berkeley, 1908.

MCBETH, KATE C. The Nez Perces since Lewis and Clark. [With an Introduction by Alice C. Fletcher.] New York, Chicago, London: Fleming H. Revell Co. [1908]. 12°, 272 p., 9 pl.

MCLACHLAN, R. W. The first Mohawk primer. Montreal: 1908. 8°, 13 p.

An account of the extremely rare "Primer for the Use of the Mohawk Children," published anonymously at Montreal in 1781, and now attributed to Col. Daniel Claus.

MATSUMURA, AKIRA. A gazetteer of ethnology. Tokyo: The Maruzen-Kabushiki-Kaisha (Z. P. Maruya & Co., Ltd.), 1908. 16°, xvi, 492, 3 pp., 6 maps.

A most useful reference work, containing, in English and Japanese, 8,000 names of peoples and tribes throughout the globe. The descriptions are brief, in most instances only the habitat of the people being given. Appendix I gives a list of races and peoples arranged under the political divisions of the world. Appendix II consists of a list of works consulted, and shows the paucity of reference works at the author's disposal, especially in relation to America. The double-page maps contain the names and localities of the principal peoples of each continent.

MOENS, H. M. BERNELOT. Truth. Experimental researches about the descent of man. London: A. Owen & Co., 1908. 12°, 26 p. (Price 1*s*.)

The author proposes to conduct, in the Congo country, a series of experimental researches consisting of (*a*) artificial fecundation of the mature females of the anthropoid apes with the sperm of man; (*b*) the crossing of the different anthropoid apes either by natural or artificial fecundation; (*c*) the study of human diseases, more particularly syphilis, experimenting on anthropoid apes.

MORTILLET, ADRIEN DE. La classification palethnologique. Paris: Schleicher frères, 1908. 16°, 12 pl., with descriptions.

MÜLLER, SOPHUS. L'Europe préhistorique. Principles d'archéologie préhistorique par Sophus Müller, traduit du danois avec la collaboration de l'auteur par Emmanuel Philipot. Paris: J. Lamarre [n. d.]. 212 pp. (Price 10 francs.)

PRATT, A. E. Two years among New Guinea cannibals. Philadelphia: J. B. Lippincott Co., 1908. 8°, 359 p., ill.

RANDALL, E. O. The masterpieces of the Ohio mound builders. The Hilltop fortifications, including Fort Ancient. Columbus: Published by the [Ohio State Archæological and Historical] Society, 1908. 12°, 126 p., ill.

SINCLAIR, WILLIAM J. Recent investigations bearing on the question of the occurrence of Neocene man in the auriferous gravels of the Sierra Nevada. Univ. Cal. Pub. in Am. Archæol. and Ethnol., VII, no. 2, p. 107–131, Berkeley, 1908.

STARR, FREDERICK. In Indian Mexico. Chicago: Forbes & Co., 1908. 8°, 437 pp., 97 pp. of illustrations in half-tone. ($5.00.)

STEELE, ZADOCK. The Indian captive; or a narrative of the captivity and sufferings of Zadock Steele. Related by himself. To which is prefixed an account of the burning of Royalton. Springfield, Mass.: The H. R. Huntting Company, 1908. 16°, xiii, 166 p., map.

A reprint of the Montpelier edition of 1818.

[STENNETT, W. H.] A history of the origin of the place names connected with the Chicago & North Western and Chicago, St Paul, Minneapolis and Omaha Railways. Compiled by one who for more than 34 years has been an officer in the employ of the system. Chicago: 1908. 8°, 2 p. l., 201 p., map.

Includes Indian place names in Illinois, Iowa, Michigan, Minnesota, Nebraska, North Dakota, South Dakota, Wisconsin, and Wyoming, with much historical information.

THOMSON, J. ARTHUR. Heredity. New York: G. P. Putnam's Sons, London: John Murray, 1908. 8°, xvi, 605 p., 49 ill.

WILSON, GILBERT L. Myths of the Red children. Illustrated by Frederick N. Wilson. Boston: Ginn & Co., 1907. 16°, ix, 154 p., ill.

A collection of eighteen Indian folktales from various authoritative sources, suitable for children. A supplement contains "Things for Children to Make," and explanatory notes on the tales. The illustrations are good and most of them instructive.

PERIODICAL LITERATURE

Conducted by Dr Alexander F. Chamberlain

[Note. — Authors, especially those whose articles appear in journals and other serials not entirely devoted to anthropology, will greatly aid this department of the *American Anthropologist* by sending directly to Dr A. F. Chamberlain, Clark University, Worcester, Massachusetts, U. S. A., reprints or copies of such studies as they may desire to have noticed in these pages. — Editor.]

GENERAL

Adachi (B.) Processus parietalis squamae temporalis. (Z. f. Morph. u. Anthrop., Stuttgart, 1907, x, 485–8.) The peculiarity studied by A. was found in 5 out of 10 European and in 37 out of 70 Japanese skulls, and is common in the anthropoids. The variation in size and form is considerable.

Andree (R.) Ethnologische Betrachtungen über Hockerbestattung. (Korr.-Bl. d. D. Ges. f. Anthr., Brnschwg., 1907, xxxviii, 135–7.) Résumé of a monograph, appearing in the *Archiv für Anthropologie*, and noticed in the *American Anthropologist*, 1908, n. s., x, 145.

Balfour (H.) The friction-drum. (J. R. Anthr. Inst., Lond., 1907, xxxvii, 67–92, 3 pl., 7 fg.) Treats of the origin, nature, and geographical distribution of the "friction drum" (the representative among American children is a tin or pasteboard cylinder with drum-head of parchment, etc., with string and rosined twirling stick), Dutch *rommelpot* (known in Europe early in 17th century), German *Waldteufel*, French *cri de la belle mère*, Italian *pan-bomba*, Spanish *zambomba*, English *hummer*, etc., Venezuelan *furuco*, Marotse *morupa*, Baluba *tambue*, Wanika *muanza*, etc., and related devices. In the New World the "friction drum" seems of foreign origin (Africa; western Europe, France more recently). European forms are not of local origin. The type with a friction-*stick* probably came into Europe from W. Africa by way of the early Portuguese or Dutch traders; the friction-*string* type may be of Indian origin (South Indian *tavalaikā*), though possibly also African. The rubbing-stick type may likewise be African. All varieties are carefully described and figured. The variety common in eastern United States a few years ago was similar to fg. 7 in B.'s list.

Balland (A.) L'évolution culinaire. (R. Scientif., Paris, 1908, 5e s., ix, 65–8.) Notes on food and its preparation, particularly in ancient Greece, Rome, medieval France, etc.

Beddoe (J.) The estimation of skull-capacity by a peripheral method. (Z. f. Ethn., Berlin, 1906, xxxix, 695–701.) Essentially the same article as appeared in *L'Anthropologie* and the *Journal of the Anthropological Institute*, with slight improvements. See *American Anthropologist*, 1905, n. s., vi, 534.

Belck (W.) Die Erfinder der Eisentechnik. (Ibid., 946–8.) Argues that not only the smelting of metallic iron but likewise the production of iron directly from the ore (at least in the time of Pliny) were known to the ancients. See *Bertholet*.

Bertholet (—) Zu Waldemar Belcks Aufsatz über die Erfinder der Eisentechnik, insonderheit auf Grund von Bibeltexten. (Ibid., 945–6.) Critique of Belck's use of Bible texts to support his theory of the invention of the iron smelting by the Philistines. See *Belck*.

Buschan (G.) Linné als Ethnologe. (Globus, Brnschwg., 1907, xci, 293–7.) Résumés the ethnological data concerning the people of Öland and Gotland (visited in 1741) in Linnæus' diary of his travels published in Swedish *Öländska och Gothländska Resa* (Stockholm, 1745) and German *Reisen durch Öland und Gotland* (Halle, 1764). Notes on agriculture, fishing, dying, plays and games, dances, customs and usages, superstitions, medicine. Observations of a "changeling" (probably an idiot) and a male hermaphroditic child were made by Linnæus.

—— Bericht über die anthropologische Literatur über Entartung und verwandte Zustände aus den letzten fünf Jahren, 1903–1907. (Z. f. d. Erforschg. u. Behandlg. d. jugendl. Schwachsinns, Jena, 1908, 139–60.) Résumés briefly the literature (125 titles) of the anthropology of degeneration, etc. (degenerative stigmata of criminals, genius, etc.; infantilism; mongoloidism; finger-prints; defects of brain; cretinism; microcephaly; abnormal ears; steatopygy; polymastia; vagabondage; prostitution; palmar sulci and folds; abnormalities of palate; orbital peculiarities; cranial capacity; morphology of finger-nails; form of sole of foot; teeth; body- and head-measurements; tattooing; cerebral asymmetry; brain-weight; "degeneration-signs"; mammary anomalies; peculiarities of the hair; dwarfism, etc.). Among the more notable items of this period are: Teixeiara Basto's *A tatuagem nos criminosos* (Porto, 1903), G. Buschan's *Gehirn und Cultur* (Wiesbaden, 1906), V. Galippe's *L'hérédité des stigmates de dégénérescence et les familles souveraines* (Paris, 1905), etc.

Courty (G.) Sur les pétroglyphes à travers le monde. (Bull. Soc. d'Anthr. de Paris, 1907, V^e^ s., VIII, 153–62.) Treats briefly of petroglyphs at the Lac des Merveilles in the Maritime Alps, thought by some to be the work of idle shepherds; at the sources of the Bou-Merzoug in southeastern Constantine (Algeria); in the Canary ids., in Morocco, the Sahara, etc.; in various parts of America and Australia; in Brittany, Seine-et-Oise, etc., in France. C. sees in petroglyphs the origin of many of the Chinese characters, and considers petroglyphs in general "the first manifestations of human thought."

van Ginneken (J.) Untersuchung über die Typologie der Sprachen. Enquête sur la Typologie des langues. (Anthropos, Salzburg, 1907, II, 690–705.) German-French article on the typology of language, "the aim of which is to explain, in a comparative and general manner, the genesis and the development of all the details of each language in phonetics, morphology, vocabulary, syntax, stylistics, by making use of all historical data concerning the peculiarities, the character, etc., of each people." Attempts along this line were made by W. von Humboldt with his *Innere Sprachform;* Steinthal; Byrne in his *General Principles of the Structure of Language* (London, 1885), whose work was made use of by von der Gabelentz and Count von der Schulenburg (1895); H. C. C. von der Gabelentz, in his *Sprachwissenschaft, ihre Aufgaben, Methoden und bisherigen Ergebnisse* (Leipzig, 1891); F. N. Finck, in his *Der Sprachbau als Ausdruck deutscher Weltanschauung* (Marburg, 1899) and *Die Klassifikation der Sprachen* (1901). Also Jespersen in his *Growth and Structure of the English Language* (Leipzig, 1905), K. Bergmann in his *Die Sprachliche Anschauung und Ausdruckweise der Franzosen* (Freiburg i. B., 1905), O. Weise in his *Unsere Muttersprache, ihr Wesen und ihr Wert*, etc. The author appeals for a series of scientific sketches of the characters of peoples, corresponding to the grammars of their language.

Giuffrida-Ruggeri (V.) Il pithecanthropus erectus e l'origine della specie umana. (Rev. di Scienza, Bologna, 1907, II, repr. 9 pp.) Treats of the *Pithecanthropus* of Dubois and its relation to the origin of the human species, the theories of Klaatsch. G.-R. concludes that an ancestral form of man probably existed in the Tertiary period—"a being at the end of the Tertiary, a precursor of man, not yet well differentiated, through showing 'higher' characteristics." The anthropoids are a divergent line, the *Pitheci* another autonomous line, and the *Pithecanthropus* the result of a distinct evolution, begun at a much lower level. The "monophyletic tree" of Haeckel does not exist for the primates. In many things the anthropoids are near man, in others far from him. It has not been proved, e. g., that extremely long arms are at all in the line of man's genealogy. The American monkeys (the *Ateles* especially) have preserved a number of ancient characters common also to man (relation of weight of brain and body, curve of skull, carrying of head, gait, etc.).

Hervé (G.) Montesquieu: l'ethnographie dan "L'Esprit des Lois; la théorie des climats. (R. Éc. d'Anthr. de Paris, 1907, XVII, 337–353.) Discusses the ethnographic material in Montesquieu's *L'Esprit des Lois* (Paris, 1748) particularly the theory of climate set forth in the second chapter of his fourteenth book—"Combien les hommes sont différents dans les divers climats," a theory whose "physiology is quite naïve and amusing."

Slavery, e. g., is a mere matter of warm climate; liberty belongs only in cold countries.

Hoesch-Ernst (L.) Vorschlag zur besseren Erhaltung der Skelette. (Korr.-Bl. d. D. Ges. f. Anthr., Brnschwg., 1907, XXXVIII, 121–4.) Proposes "ossuaries," in which the bones of the dead (after the flesh has been stripped off, burned, and placed in urns if desired) may be stored, with labels indicating name, etc., to be used, when necessary, by the physician, the anthropologist, etc. This would enable science to take advantage of a vast amount of material now wasted, and contribute much to the study of heredity, pathology, etc.

Holcombe (C.) Oriental ethics compared with Western systems. (Int. J. Ethics, Lond., 1907, XVIII, 168–81.) Treats of Confucius and Laotze and their ethics—"the chief secret of the marvelous success, a success that has made the Chinese in some respects the most moral people in the world, is to be found mainly in the methods adopted to inculcate it."

Lapicque (L.) Tableau général des poids somatique et encéphalique dans les espèces animales. (Bull. Soc. d'Anthr. de Paris, 1907, V^e^ S., VIII, 248–70.) Presents a table, constructed on a logarithmic scale of body and brain weights in the animal series — the abscissa is the logarithm of the body-weight, and the ordinate the logarithm of the brain-weight. In this scheme related species are disposed along parallel lines, each natural group, e. g., *Felidæ*, having its *isoneural* line. This corresponds to the algebraic expression of Dubois for the mammals in general.

—— Le poids encéphalique en fonction du poids corporel entre individus d'une même espèce. (Ibid., 313–45.) Treats of the law in question with regard to the dog, squirrel, man; cerebral regression in domestic animals (rabbit, hare, ruminants, birds, etc.); sexual differences of brain-weight in man. The body and brain-weights of man and woman stand in the same relation to each other as do two distinct animal species of the same nervous organization. In all species of animals domestication has had the effect of diminishing the relative brain-weight.

Lehmann (J.) Systematik und geographische Verbreitungen der Geflechtsarten, mit einem Anhang: Die hauptsächlichsten Arten von Knoten. (Abh. u. Ber. d. K. Zool. u. Anthr.-Ethn. Mus. zu Dresden, 1907, XI, Nr. 3, 1–35, 3 pl., 195 fg.) First part treats of the various sorts of weave, their technique, nomenclature, etc., and their geographical distribution. Each variety of weave is indicated by a formula. Half-weaves and over-weaves are considered. Fig. 18, e. g., in Mason's *Aboriginal American Basketry*, corresponding to fig. 69 in Lehmann, is VIB b *.

Liebreich (R.) L'asymétrie de la figure et son origine. (C.-R. Acad. d. Sci., Paris, 1908, CXLVI, 593–7, 3 fg.) From an examination of more than 5,400 ancient and modern skulls, including 400 Egyptian mummies and numerous living subjects, L. concludes that asymmetry is not, as Lombroso holds, a stigma, a malformation, a sign of degeneration, but "the normal form of the human face." It originates in the last period of intrauterine life, from the position of the embryo. Facial asymmetry is "a consequence, a necessary accompaniment of the vertical posture of man, and is thus one of the distinct marks of the species."

Marangoni (M. E.) Ricerche sul perone. (A. p. l'Antrop., Firenze, 1907, XXXVI, 305–20, 7 fg.) Gives results (details of measurements, etc.) of examination of the fibula in 112 long-bones of both sexes and numerous races — 64 Italians, 23 American Indians — with description and figures of transverse section. The greatest development of the fibula in the animal series occurs in man, due to the presence of the very strong muscles necessary to maintain the erect position. The fibula is not curved or in correspondence with the tibia; when curvature in the fibula occurs it tends rather to be antagonistic. Among the bones studied were those of three Tuscan giants.

Martin (R.) System der (physischen) Anthropologie und anthropologische Bibliographie. (Korr.-Bl. d. D. Ges. f. Anthr., Brnschwg., 1907, XXXVIII, 105–19.) Discusses various schemes of classification of anthropological science, particulary those of Broca, Topinard, E. Schmidt, and outlines his own classification, with library rubrics after the Dewey system, — I. General (physical) anthropology; II. Special or systematic (physical) anthropology, including A, Somatology; B, Morphology; C, Physiology; D, Pathology. III, Anthropogeography.

Meinhof (C.) Warum studiert man primitive Sprachen? (Anthropos, Salzburg, 1907, II, 755–60.) Argues for the study

of primitive languages, because they precede culture-languages as dialects do written language, and because their phonetics and morphology represent phenomena uncontaminated by the "mistakes of the learned" concerning the nature of human speech, etc. The knowledge of the languages of primitive peoples is also often of great practical use.

Mollison (T.) Einige neue Instrumente zur Messung von Winkeln und Krümmungen. (Z. f. Morph. u. Anthrop., Stuttgart, 1907, x, 489–99.) Describes new instruments for measuring angles and curves — goniometer, horizontal-holder, cyclometer, etc.

Mühsam (—) Die biologische Differenzierung von Affenarten und menschlichen Rassen durch spezifische Blutreaktion. (Z. f. Ethn., Berlin, 1907, XXXIX, 706–7.) Résumés briefly the investigations of Carl Bruck (cf. *Berl. klin. Wochenschr.*, Nr. 26) on specific blood-reaction as a biological differentiation of anthropoid and human races.

Myres (J. L.) A bureau of biometry. (Oxf. and Cambr. Rev., Lond., 1907, I, no. 1, 131–44.) Argues for the registry of the ancestry and descendance of students, anthropometric data, psychic qualities, achievements at the university and in after-life, etc. Such a bureau on a voluntary basis is urged as of great evolutional value.

Neuhauss (R.) Ueber neuere photographische Hilfsmittel für den Forschungsreisenden. (Z. f. Ethn., Berlin, 1907, XXXIX, 966–72.) Treats of the photographic equipment of the modern investigator. Both a stand and a hand camera are needed. Plates are preferred over films. Flashlights and kinematographs are advisable.

Oppenheim (*Frl.* St.) Die Suturen des menschlichen Schädels in ihrer anthropologischen Bedeutung. (Korr.-Bl. d. D. Ges. f. Anthr., Brnschwg., 1907, XXXVIII, 128–35, 9 fg.) Résumés results of examination, by means of a suture-scheme, of 460 skulls in the museums of Zürich and Paris (Swiss, Papuans, New Caledonians, Maori, deformed Peruvians, Berbers, Burmese, Battak, Chinese, children's skulls of various races, pathological, i. e. microcephalic and hydrocephalic skulls). The Swiss and Berbers have the most complicated sutures, the Chinese the simplest. The simpler coronal suture is generally typical for dolichocephalic skulls, as is the more complicated for brachycephalic. Microcephalic and hydrocephalic skulls have very complicated sutures. Miss O. divides each of the three sutures, coronal, sagittal, and lambdoid, into three sections; she also makes a "suture index."

Regnault (F.) A propos de la morphogénie osseuse. (B. Soc. d'Anthr. de Paris, 1907, V^e^ s., VIII, 304–5.) Reply to critique of M. Papillault. The mechanical theory is not "a mere valueless hypothesis."

Rutot (A.) Un grave problème. Une industrie humaine datant de l'époque oligocène. Comparison des outils avec ceux des Tasmaniens actuels. (Bull. Soc. Belge de Géol., etc., Bruxelles, 1907, extr., pp. 1–46, 64 fg.) Treats of the eoliths discovered by M. de Munck in a sand-pit on the main road from Tilff to Boncelles, and compares them with flints of the modern Tasmanians (figures of both are given), in the light of recent investigations of Dr Klaatsch. The Tasmanian flints are purely eolithic; real instruments, i. e. retouched pieces, are rare; "stations" are on streams and near deposits of suitable material; the great number of flint implements is accounted for by their being soon spoiled and often used but for a brief time; the situation of the Tasmanian shell-heaps indicated the ancient residence of man on the island. Thus the eoliths, the conditions of their use, and the culture people who employed them are practically identical — "a very primitive people with an unchanging eolithic industry."

Sageret (J.) Les nombres et la cosmologie. (R. Scientif., Paris, 1908, 5^e^ s., IX, 225–32.) Treats of number-lore in ancient India, China, Asia Minor, Greece (Pythagorean school), etc.

Schlaginhaufen (O.) Die Körpermasse und der äussere Habitus eines jungen weiblichen Schimpansen. (Abh. u. Ber. d. Kgl. Zool. u. Anthrop.-Ethnogr. Mus. zu Dresden, 1907, XI, Nr. 4, 1–18, 1 pl., 13 fg.) Describes, with measurements, stature, bodily proportions, color, etc., of skin, form of ear, hair, nails, etc., of a young female chimpanzee (*ca.* 4 yrs.) from the Kongo, in comparison with other chimpanzees, etc., and with man. The height-finger-reach index, 138.3, is far beyond anything human (the height is 860 mm. as compared with 960 mm. for a 4-year-old human being; inter-membral index, 110.5 and 75.3). The palmar and plantar grooves and fur-

rows, etc., are interesting, particularly those on the dorsal side of the fingers. The curve of the nails of the hand is greatest on the fourth finger (as in man); for the foot, on the fifth toe.

Schmidt (W.) Die Sprachlaute und ihre Darstellung in einem allgemeinen linguistischen Alphabet. Les sons du langage et leur représentation dans un alphabet linguistique général. (Anthropos, Salzburg, 1907, II, 282–329, 508–87, 822–97, 1058–1105, tables and charts.) This monograph on a universal phonetic alphabet consists of a sketch of the history of phonetics (early Greeks, Latins, Hindus, humanists, Spain and Italy, France, England, Denmark) and modern (first French period, first German period, England, Scandinavia, philological tendencies and schools, second period in France, etc., experimental phonetics as the phonetics of the future), a historical-critical account of the various linguistic alphabets (those employing newly-invented signs, those employing the different forms and positions of the Latin letters, intermediary systems, systems with only one form of Latin letters), system of sound and a phonetic alphabet and its necessary characters — a new acoustic articulatory system of vowels, consonants, etc., practical applications to various languages with phonetic texts (German, English, French, Italian, Spanish), phonetic systems of Greek, Sanskrit, Latin, Chinese, Annamese, Khmer, and Mon, Siamese, Malayo-Polynesian, Indonesian, Melanesian, Bantu, Negro languages of Upper Guinea, American languages. The author, who is editor of *Anthropos*, requests the adoption of the new phonetic alphabet proposed in this monograph in the articles of contributors, etc.

Schwalbe (G.) Aufgaben der Sozialanthropologie. (Korr.-Bl. d. D. Ges. f. Anthr., Brnschwg., 1907, XXXVIII, 65–68.) Outlines the scope of "social anthropology," with its branches: criminal anthropology, sociology (social science), etc.

Spitzka (E. A.) A study of the brains of six eminent scientists and scholars belonging to the American Anthropometric Society, together with a description of the skull of Professor E. D. Cope. (Trans. Amer. Philos. Soc., Phila., 1907, N. S. XXI, 175–308, 30 pl., 16 fg.) Besides a résumé of what is known of the brains of 130 notable men and 4 women of various nationalities (also list of cranial capacities of 64 eminent men) and a discussion of the comparative aspects of the general subject ("the brain of a first-class genius like Friedrich Gauss is as far removed from that of the savage Bushman as that of the latter is removed from the brain of the nearest related ape"), Dr S. describes in detail with numerous figures, the brains of Dr Joseph Leidy (1823–91) eminent in all branches of biology, and his brother, Dr Philip Leidy (1838–91), eminent physician and surgeon; Dr A. J. Parker (1855–92), comparative anatomist of note; Dr Harrison Allen (1841–98), eminent zoölogist and comparative anatomist; Dr E. D. Cope (1840–97), famous paleontologist and philosophic anatomist; Dr William Pepper (d. 1898), eminent clinician. Professor Cope's skull is mesaticephalic (index 77.6), with proportionately large cranium as compared with face (cf. Kant's skull). The brains of the two Leidys do not resemble each other so markedly as do the brains of the three Van Wormer brothers (criminals), and there are certain notable differences. The heaviest brain of the six was that of Dr Pepper (1593 gr.), who was a man of affairs as well as a physician, the smallest that of Dr P. Leidy (1415 gr.). The brains of these notable men show larger callosa (that of J. Leidy "exceeds in cross-section area that of any other in this series or recorded in literature"). Very significant also is the "cerebro-cerebellar ratio." J. Leidy's keen sense of observation and power of visualizing, memorizing, etc., and Cope's power of abstract generalization, are reflected in the organization of their brains. According to Dr S. the data abundantly prove the superior character of the brains of great men.

Stieda (L.) Ueber die Bedeutung der Hirnwindungen. (Korr.-Bl. d. D. Ges. f. Anthr., Brnschwg., 1907, XXXVIII, 137–8.) L. argues on the basis of extended studies that shape, form, and appearance of cerebral convolutions are of no significance with respect to intelligence (the sheep's brain is rich and the mouse's poor in convolutions; the brain of Dr. G. Sauerwein, a celebrated linguist, who died in 1904 (said to have been well acquainted with 54 languages), examined by S., showed no unusual development of the convolutions. S. believes that the gray cortex alone, not the form and fashion of the convolutions, is significant for intelligence.

Virchow (H.) Ueber den Stand der Rudolf Virchow-Stiftung für das Jahr 1907. (Z. f. Ethn., Berlin, 1907, XXXIX, 978–94, fg.) Résumés the year's investigations at the Einhorn cave and at the prehistoric burial place of Abusir el Meleq. Gives also list of grants for anthropological researches (Frobenius, Wiegers, Götze, Oesten, von Luschan, Weissenberg, Gaupp, Stumpf, Lehmann-Haupt), a total of 15,780 marks.

—— Ein menschliches Gebiss mit ungewöhnlich langen Zahnwurzeln. (Ibid., XXXIX, 747–9, 2 fg.) Brief account, with measurements of human teeth with unusually long roots.

—— Zwei Diapositive von hohlen Eckzähnen von Anthropoiden. (Ibid., 749–52, 2 fg.) Records the occurrence in the upper jaw of an orang skull in the zoological collection of the Berlin Natural History Museum, of a hollow left eye-tooth, and the same also in the lower jaw of a chimpanzee skull. This argues against the theory that all hollow teeth of animals (e. g. cave-bear) found in prehistoric stations, etc., reveal human handiwork.

EUROPE

Andree (R.) Die Nephritindustrie in Oberstein-Idar. (Z. f. Ethn., Berlin, 1907, XXXIX, 943–5.) Treats of the production from New Zealand nephrite, etc., of Maori weapons and ornaments, *tiki*, *mere*, etc., at Oberstein and Idar, where they are openly sold as made after genuine models. Similar objects from Asiatic nephrite are made for the Chinese market in Idar.

Atgier (—) Crâne néolithique trouvé à l'Ile de Ré. (B. Soc. d'Anthr. de Paris, 1907, V^e^ S., VIII, 305–7.) Describes, with measurements, a sub-dolichocephalic (index 76.47) skull found in 1853 in the Peu-Pierroux tumulus, belonging to the close of the neolithic period (Robenhausian). Dr A. considers that "this skull is probably that of a woman, a famous druidess, doubtless, of the dolmen epoch."

—— Crâne altra-brachycéphale provenant du tumulus du Peu-Pierroux à l'Ile de Ré. (Ibid., 307–9.) Describes, with measurements, an ultra-brachycephalic male skull (index 90.80) from the Peu-Pierroux neolithic tumulus, and compares it with a Lapp cranium. Dr A. thinks that the sub-dolichocephalic female skull represents a type allied to the old Iberians (brunette long-heads), while the male ultra-brachycephalic skull belongs with the conquerors who appeared at the end of the neolithic period (brunette broad-heads) and were later known as Celts. Out of this mixture grew the protohistoric Celtiberians.

Baudouin (M.) Le Congrès Préhistorique de France. Autun, août 1908. (R. Scientif., Paris, 1907, 5^e^ S., IX, 197–205, 10 fg.) Treats briefly of program (100 papers were offered), and excursions (the last 4 days were devoted to visiting Mont-Beuvray, — Bibracte of Edui, —the dolmens of Nolay and the typical neolithic station of Chassey, the famous paleolithic site of Solutré, and the oppidum of Alesia), etc.

Berrueta (J. D.) Las Jurdes. (Anthropos, Salzburg, 1907, II, 492–8, 2 pl.) Notes on the *Jurdes*, part of the province of Caceres, long almost a land of fable, and its inhabitants, "cut off from the civilized world," a primitive Spanish folk, whose existence in the 20th century is a humanitarian and sociological problem. They have been studied by R. Martin Santivañez in his *Un mundo desconocido en la provincia de Extramadura*, and by Vicente Barrantes in his *Las Jurdes y sus leyendas*.

Beyerthal (—.) Weitere Untersuchungen über die Beziehungen zwischen Schädelumfang und Intelligenz im schulpflichtigen Alter. (Z. f. experim. Pädag., Lpzg., 1907, V, 223–30.) Continues studies of the relation between head-circumference and intelligence. In the case of children of 9½–10½ years, success in school demanded for boys a head-girth of 52 cm., and for girls one of 51 cm., with few exceptions. His studies of 2000 school-children between the ages of 6 and 10, also lead him to believe that six-year-old girls with a head-girth below 49 cm. and boys with one below 50 cm., rarely do very well at school.

Bezzenberger (A.) Vorgeschichtliche Bauwerke der Balearen. (Z. f. Ethn., Berlin, 1907, XXXIX, 567–634, 73 fg.) Interesting account, with plans, measurements, etc., of the author's investigations of the *talayots*, etc., of the Balearic isles. Those at Son Herued, S'Aguila, Canova de Morell, Trebuco (also stone-table), Curnia, Turo, Telati de Dalt (also stone-table and cave), Casana (and stone-table of Torellasa), Hostal near Ciudadela, the Nau d'Es Tudons, the Calas Covas "grottoes," etc., are described. B. regards these prehistoric megalithic towers

(cf. the Sardinian *nuraghe*) as forts or places of refuge. That the *nuraghe* and *talayots* have had an independent origin on a similar basis is very likely; if one has suggested the other, the priority of the *talayots* is quite as probable as vice versa. Since the *sesi* belong to the stone age, it is quite possible that some *talayots* are at least eneolithic. The complete investigation of a few *talayots* is very desirable.

Busse (H.) Tongefässe von Woltersdorf im Kreise Nieder-Barnim. (Ibid., 703–704.) Brief account of finds of several hundred clay vessels, many bronze objects, etc., one notably large urn in particular. The author excavated 95 graves in this urn-burial cemetery of the later bronze age. His results will be published in the near future.

Capitan (L.) *et* **Dumas** (U.) Les constructions autour des dolmens. (Rev. Éc. d'Anthr. de Paris, 1907, XVII, 330–5, 2 fg.) Brief description of low "walls" of dry stones around dolmens in the department of Gard, e. g., at Tharaux, Congoussac, Carquignaon, Coumoulet, Bouïssas, Chêne, etc. The relation of these enclosures to the dolmen is unknown, whether funerary, like the dolmens, house or cattle-enclosures, as has been suggested.

Courgey (—). Agglomérations nouvelles autour de Paris. Leur origine. Leurs conditions hygiéniques. (B. Soc. d' Anthr. de Paris, 1907, V^e^ s., VIII, 364–71.) Treats of the new groups of people growing up around the city of Paris. The inhabitants of the "military zone" in this class are "at once a curiosity and a shame of Paris." Summerers in the suburbs become winterers in the city later on. Near the Choisy gate are two separate and independent groups, the *camp italien* and the *camp espagnol*.

Favraud (A.) Station Aurignacienne au Port-Neuf, commune de la Couronne, Charente. (R. Éc. d'Anthr. de Paris, 1907, XVII, 418–28, 7 fg.) Gives results of investigations made in 1904 — the station was discovered by F. in 1889. Stone implements are described and figured; a few objects of bone were discovered, including a striated and incised lion's tooth. This station differs much from the neighboring upper Solutrean shelter of Combe-a-Roland, there being hardly anything common in their human industry; the Port-Neuf station is pre-Solutrean, much earlier and represents a stage distinct from both Magdalenian and Solutrean.

Favreau (P.) Die Ausgrabungen in der Einhornhöhle bei Scharzfeld. (Z. f. Ethn., Berlin, 1907, XXXIX, 524–50, 8 fg.) Gives results of excavations in 1905–06 in the "Einhornhöhle" (known since the end of the 17th century) near Scharzfeld in the Harz. Large numbers of fossil bones of bears (*U. spelæus* chiefly), some of which may have been used by man. At pages 540–3 Hr. Windhausen treats of the geological conditions of the finds — he assigns the cave to the Diluvium. An extended discussion by Hrn. Wiegers, Krause, Virchow, and Kossinna followed. The earlier Sturckmann finds of potsherds, etc., have been called in question.

Fischer (A. K.) Zur Frage des Aufenthaltes der Hunnen und Sarazenen in den Alpen. (Mitt. d. K.-K. Geogr. Ges. in Wien, 1908, XLI, 59–60.) Critique of article by B. Reber in an earlier issue. F. disclaims previous knowledge of R's book, *Die Hunnen im Schweizerischen Eifischtale* (Zürich, 1896).

Frédéric (J.) Beiträge zur physischen Anthropologie der Elsass-Lothringer. (Korr.-Bl. d. D. Ges. f. Anthr., Brnschwg., 1907, XXXVIII, 76–9, 3 fg.) Treats of the cephalic index of 2145 (men 1176, women 969) natives of Alsace-Lorraine, measured by the author. The index averages 82.86 for men, 82.43 for women, av. for both sexes 82.67 — of all the indices 51.8 per cent. were from 80 to 84. The average index for natives of Strassburg was 81.94; for natives of other towns, 81.82; for country subjects, 83.19; for Lower Alsace, 83.01; Upper Alsace, 83.90; Lorraine, 84.04. In Lorraine the percentage of blonds is larger than in the two other sections, and the percentage of brunets the smallest; in Lorraine the percentage of short statures is relatively small, of tall relatively large. Comparison with skulls of earlier periods indicates that the present native population of Alsace-Lorraine have a higher percentage of mesocephaly and a lower percentage of high brachycephaly than the people of this region in the Middle Ages, who were nearer to the Alpine primitive population.

Fritze (—) Ueber einige weitere Funde aus der Einhornhöhle. (Z. f. Ethn., Berlin, 1907, XXXIX, 957–8.) Notes

recent discoveries, at the Einhorn cave, of potsherds and bones of cave-bears, lions, dogs, stags, bison, horses, sheep, etc. One fragment of the lower jaw of a cave-bear has a wound of possibly human origin. See *Favreau; Hahne.*

Girod (P.) Note sur le Solutréo-Magdalénien dans les vallées de la Vézère et de la Corrèze. (B. Soc. d'Anthr. de Paris, 1907, V^e^ S., VIII, 297–304, 4 fg.) Treats of the succession of strata of the Solutrean-Magdalenian epoch at Laugerie Haute, Cro-Magnon, etc. Here the Aurignacian reposes on the Solutrean and serves as a base to the Magdalenian. The Solutrean is essentially lithic; reindeer horn and bone occur in the Aurignacian, to develop more fully with the dawn of the Magdalenian. The chronology indicated characterized the Vézère valley, etc.

Gnirs (A.) Beobachtungen über den Fortschritt einer säkularen Niveauschwankung des Meeres während der letzten zwei Jahrtausende. (Mitt. d. K.-K. Ges. in Wien, 1908, LI, 1–56.) Treats of secular changes of sea-level during the last 2000 years in Istria, Dalmatia, northern Adria, west coast of Apennine peninsula, Sicily, Egean sea, Crete, Sea of Marmora, Gulf of Corinth and Ionian sea, coast of Levant, Asia Minor and Syria, North African coast, coast of western Europe, etc. Over all this area changes in sea-level are noted. Contains useful information concerning ruins, harbors, monuments, etc., now or formerly at the sea-shore.

Gorjanovic-Kramberger (K.) Die Kronen und Wurzeln der Molaren des Homo primigenius und ihre genetische Bedeutung. (Korr.-Bl. d. D. Ges. f. Anthr., Brnschwg., 1907, XXXVIII, 138–41.) Holds that the manifold agreement of the teeth of the man of Krapina (primitive characters are also retained) with those of the modern European, make it certain that "the *Homo primigenius* was really the direct ancestor of recent man, of the great race that now inhabits Eurasia, America, and North Africa." A fuller article appears in the *Anatomischer Anzeiger*, Jena, 1907, XXXI, 97–134.

Götze (A.) Konservierung prähistorischer Steinmauern. (Ibid., 159–61.) Brief account of the preservative and restorative work at the "Steinsburg," at Römhild, with suggestions for the preservation of other stone walls, fortifications, etc., of prehistoric times.

Gutmann (K.) Ueber den Stand der Altertumsforschung in Oberelsass. (Ibid., 71–5.) Résumés the results of archeological investigations in upper Alsace (Egisheim skull, 1865; paleolithic station near Egisheim, 1887; cave-dwellings of Oberlang, etc., neolithic graves near Egisheim, 1889–93; skeletons of Illberg, 1904; finds of bronze age, particularly 1905–07 and in the Sundgau hill-country; fort or refuge of Köstlach; La Tène period, represented by tumuli, etc., in the plains; Roman period numerously represented architecturally, etc. (several castella, streets, etc.), period of the early Middle Ages, or "Alemannic epoch." No Alemannic cemetery has yet been systematically investigated and scientifically described. Many lacunæ exist in our knowledge of Gallo-Roman relations, and particularly also with respect to the Hallstatt culture and its origin.

Haberlin (—.) Flechten und Weben auf Föhr und den Halligen. (Globus, Brnschwg., 1908, XCI, 330–2, 4 fg.) Brief account of the methods of weaving still in use on the island of Föhr, and the "halligs" of the Frisian coast. The "weaving-board" was once widespread on the islands and the adjacent continent.

Hahne (H.) Ueber die im hannoverschen Provinzialmuseum befindlichen ältern Einhornhöhlenfunde. (Z. f. Ethn., Berlin, 1907, XXXIX, 954–7.) Notes on the earlier material from the Einhorn cave at Scharzfeld, now in the Provincial Museum of Hanover, amounting to several thousand specimens. The remains (stone, bone, bronze, iron, pottery, etc.) indicate that the cave has been inhabited by man from the stone age up to medieval time. No clear evidence of diluvial man has yet been found in this cave. See *Fritze.*

Heierli (J.) Neue Forschungen in Pfahlbauten. (Korr.-Bl. d. D. Ges. f. Anthr.-Brnschwg., 1907, XXXVIII, 119–20.), Notes on recent investigations of Swiss lake-dwellings, Meier's excavations in the Wauweiler Lake, 1903–06, in particular. The Schötz lake-dwellings belonged to the middle neolithic age and later.

—— Die bronzezeitliche Quellfassung von St. Moritz. (Ibid., 120–1, 2 fg.) Treats of the St Maurice spring in the Engadin and the recent discoveries of evidence of its use (wooden pipes, two bronze swords, a dagger, a needle) in the bronze age at least 3,000 years ago. The wooden pipes, etc., and the bronze votive gifts are now in the Engadin Museum at St Moritz.

Herbert (A. S.) The fairy mythology of Europe in its relation to early history. (Nineteenth Cent., Lond., 1908, 220–31.) Treats of "the queer little Finnish or fairy population of prehistoric Europe," the "Kynesians," who are "older than any Aryan invasion," etc. In this *outré* paper, the author etymologizes at will with the original roots 'pit' and 'gen' or 'gan,' to produce Gaelic *Pict*, English *Pixy*, Latin *Pan*, with which belong also *Finn*, *Faunus*, *genius*, and even modern French *finesse*. Also he holds that the Greek 'pigmaios' and the Gothic 'pitguma,' Germanized into 'gnome,' mean simply a yellow man. The real prehistoric pigmies of Europe, who have long since died out, live thus as fairies in the minds of their Aryan supplanters. This is Macritchie's theory run mad.

Honzik (E.) *und* **Schmidt** (H.) Die prähistorische Station von Sarata-Monteorŭ, Bezirk Buzeŭ. (Z. f. Ethn., Berlin, 1907, XXXIX, 999–1003, 9 fg.) Gives account of remains discovered (house-sites, thin culture-strata with ash-layers containing bones, pottery fragments, etc.; four graves with skeletons, pottery, objects of stone, bone, etc.) at Sărata-Monteorŭ, southwest of Buzeŭ in Roumania. A bronze armlet, a copper ax, an ear-ornament of copper wire, many and varied pottery fragments, heaps of animal bones (horse, cattle, bear, wolf, fox, pig, sheep-stag rare, a few bird bones). The "ear-handle" pottery finds analogues in parts of Bohemia (terra mare culture), etc.; some of the pottery also belongs with that of the Macedonian tumuli. The station probably belongs to some part of the bronze age.

Jeannel (R.) Sur la découverte, dans la grotte du Portel, de peintures préhistoriques répresentant l'homme et des animaux. (C.-R. Acad. d. Sci., Paris, 1908, CXLVI, 654–6.) Brief account of paleolithic paintings of animals (bison, horses, reindeer, etc., mostly horses) and of two men on foot (one figure is very dolichocephalic, with retreating forehead — head is in profile, body and limbs *en face*; the other has a simian attitude), in the cavern of Portel (also called Crampagna), commune of Loubens, canton of Varilhes, Ariège. All the paintings except one are monochrome. This is the first discovery of *painted* human figures in paleolithic caves. The animal pictures do not show the artistic perfection of Altamira or Niaux. Few signs occur among the 40 paintings. This important discovery was made March 9, 1908.

Jentsch (H.) Die Bestimmung der Tonschale mit Leistengestell. (Z. f. Ethn., Berlin, 1907, XXXIX, 953–4.) According to J., the Cottbus clay vessel with support may have served for melting fat, heating food (for children, e. g.), and perhaps also for preparing colors.

Kassel (—) Ueber Elsässische Trachten. (Korr.-Bl. d. D. Ges. f. Anthr., Brnschwg., 1907, XXXVIII, 152–9.) Sketches the history of Alsatian dress, costume, etc. Peasant costume of 16th, 17th, 18th, and 19th centuries all different; temporal and local variations; men's and women's dress and their peculiarities.

Labrie (—) Le dolmen ou allée couverte de Curton à Jugazan. (Bull. Soc. Archéol. de Bordeaux, 1906, XXVIII, 41–50, 2 pl., fg.) Describes the dolmen of Curton discovered in March 1904, the remains found (bones representing 8 adults, 3 pierced shells, bone ornaments, etc.). The remarkable pickax-shaped bone ornament is like others found in the dolmens of Peyrelebade and Fargues. An intrusive occupancy from the Gallo-Roman period (fragments of pottery, etc.) on as a shelter is indicated.

—— Remarques sur les monuments mégalithiques de l'Entre-deux-mers. Ibid., 50–65, 2 pl., map.) Treats of the dolmens or "allées couvertes" of Bignon, Peyrelebade, Trois Pierres, tumulus, caverns (Fontarnaud, reindeer-age habitation, then neolithic burial-place); menhirs (the *grandes bornes* of Lugasson, etc.), and other remains.

—— L'abri préhistorique de Baring à Daignac. (Ibid., 65–6, 1 pl.) Brief notes on a shelter of the Magdalenian epoch (above this stratum are fragments of neolithic pottery, etc.). This may have been an important station, to judge from the indications of human habitation, implements, bones, etc.

Laville (A.) Au sujet d'un instrument recueilli dans une carrière à Villeneuve-Saint-Georges. (Bull. Soc. d'Anthr. de Paris, 1907, V^e^ s., VIII, 205–6.) Brief description of a whetstone or skin-smoother said to have been found in a quarry at Villeneuve-St-Georges, and resembling a similar instrument from Vignette. The epoch of both finds

would be between the close of the neolithic and the beginning of the bronze age.

Liedloff (*Dr*) *und* **Schmidt** (H.) Eine steinzeitliche Niederlassung bei Grimma. (Z. f. Ethn., Berlin, 1907, XXXIX, 997–9, 1 fg.) Describes five types of ornamented and unornamented pottery from the later neolithic station near Draschwitz in Saxony, where remains of at least 24 dwellings, many flint implements, mortars, whorls, potsherds, etc., were found. This was a considerable village of "ribbon pottery" people.

Lissauer (A.) Vierter Bericht über die Tätigkeit der von der Deutschen Anthropologischen Gesellschaft gewählten Kommission für prähistorische Typenkarten. Die Typenkarte der ältesten Gewandnadeln. (Ibid., 785–831, 58 fg., map.) Describes, with map of distribution, the oldest clothes-needles types in prehistoric times in the region of the German Empire. Needles of the early bronze period (3 types and 5 other rarer forms), needles of the older bronze period (3 types). In the needles of the early bronze age the "eye" is at the head; in those of the older, on the neck. The needle with holed head (five variants) and the "ösennadel" originated in Bohemia, spreading thence south, north, and west. The East German "ösennadel" belongs to the oldest bronze period. The two-part northern fibula is an independent invention.

Manouvrier (L.) Les crânes et ossements du dolmen de Menouville, Seine-et-Oise. (Bull. Soc. d'Anthr. de Paris, 1907, V^e^ s., VIII, 168–74, fg.) Description and measurements of 20 skulls, long-bones, etc. (10 m., 10 f.), from the neolithic dolmen of Menouville. The indices range from 67.5 to 83; some are finely developed, others mediocre. The average stature (calculated) is for men 1594 mm., women 1502 mm.

Möller (A.) Ueber neue Funde in den Ehringsdorfer Kalkbrüchen. (Z. f. Ethn., Berlin, 1907, XXXIX, 964–6, fg.) Brief account of the discovery in the limestone quarries at Ehringsdorf of four strata of charcoal and ashes, with flints, bones of bears, etc.

de Morgan (J.) Observations sur les origines des arts céramiques dans le bassin méditerranéan. (R. Éc. d'Anthr. de Paris, 1907, XVII, 401–17, 36 fg.) Discusses briefly the ancient pottery (technique, ornament, painting, enameling) of Egypt, Elam, Syria, etc. The author seeks to prove his theory of the Asiatic origin of the ceramic arts of the Mediterranean region. Elamite painted pottery dates back to beyond the 40th century B. C., while the corresponding pre-Hellenic or Greece specimens belong only to the 20th century B. C. (this excludes Susian contact). Primordial related centers of painted pottery existed in Egypt and Elam; a secondary one in Canaan. In the valley of the Nile the painting of pottery was anciently replaced in Egypt by enameling, an art appearing much later in Elam, etc. M. de M. believes that "in the greater part of human activities the Orient and the Mediterranean were intimately related."

de Mortillet (A.) Étude sur quelques dolmens de l'Hérault. (Ibid., 301–29, 17 fg.) Describes briefly (with various particulars in some cases) numerous dolmens at Soumont (the Belvedere de Grammont group), La Vacquerie (Mas de Bedos, Férussac group, Saint-Martin), Saint-Maurice (La Prunarède group), Minerve (Grand Causse group, Bois-Bas group), etc. All the dolmens seem to have been buried originally, either built below the level of the ground or covered by a tumulus of earth or stones. There are no real "dolmens on tumuli."

Nippgen (M.) Origine et époque des emprunts d'anciens mots germaniques par les langues finnoises baltiques. (Bull. Soc. d'Anthr. de Paris, 1907, V^e^ s., VIII, 179–203.) Treats of the phonetic and morphologic character of the Teutonic loan-words in the Finnish languages of the Baltic group, the time of borrowing, etc. Based on E. N. Setälä's article in the *Journal de la Société finno-ougrienne* for 1906. Very many of these loan-words belong to a stage of Teutonic older than Gothic. The Scandinavian-Finnish contact is later (the advent of the Finns in Finland dates from the first centuries of our era and not later than the fourth).

Olshausen (O.) Beitrag zur Frage des Auftretens metallischen Eisens in vormykenischer Zeit in Kleinasien. (Z. f. Ethn., Berlin, 1907, XXXIX, 691–5.) Discusses the two finds of alleged metallic iron of pre-Mycenean age in Asia Minor (Troy; mound at Bos-Öjük in northern Phrygia, also at Pebi) cited by Götze, but considers the cases not proved.

Paravicini (G.) Di un'interessante microcefala litteliana. (A. p. l'Antrop.,

Firenze, 1907, XXXVI, 113–289, pl.) Detailed anthropometric (measurements at 14 and 34 years compared), anthropological, physiological, psychological study of Luigina L., a microcephalic woman (hereditary and family taint; injury to mother in pregnancy), 34 years old, stature 1337 mm., cephalic index 78.91, with many peculiarities, defects, "atavisms," etc. Bibliography of 249 titles.

Pittard (E.) Nouveaux instruments en os provenant d'une station moustérienne Aux Rebières (Ourbières), Dordogne. (R. de l'Ec. d'Anthr. de Paris, 1907, XVII, 429–33, 3 fg.) Describes additional bone implements from Aux Rebières, proving the existence in a Mousterian station of diaphyses used as instruments, and of worked bones.

Schell (O.) Abwehrzauber am bergischen Hause. (Globus, Brnschwg., 1907, XCI, 335–8, 363–6, 3 fg.) Treats of warding-off charms in connection with the house in Berg. Construction (traces of sacrificial customs at foundation, "building sermon," "May-beech," carrying in Bible and salt before using house), objects and symbols effective to ward off evil (whole animals or parts of them still nailed to the door, set in gable, etc., e. g., owl, horse-skull, horns, St Andrew's cross, full, half, and quarter figures of the sun), house-inscriptions, etc.

Schenck (A.) Les populations de la Suisse depuis la période paléolithique jusqu' à l'époque gallo-helvète.) Bull. Soc. d'Anthr. de Paris, 1907, V° S., VIII, 212–28.) Treats of the succession of races in Switzerland from the paleolithic to the Gallo-Helvetian period, classification of the various periods — cave dwellers of Magdalenian type, paleolithic man (Săntis de l'Ours, Rhone basin, Veyrier, Villeneuve, Schaafhausen, Thayngen, Freudental, Schweizersbild, Schüssenried, etc.) mesolithic (Schweizersbild, Bellerive, Moulin de Liesberg), neolithic, bronze, iron, and certain "transition epochs." The human remains from Chamblandes, etc., and from the lake dwellings are specially considered. S. thinks that the peoples of Switzerland to-day are "a mixed race, belonging in great part, however, to the round-headed ethnic element of Ural-Altaic origin, which, coming from the east, occupied the region of the lower Danube, southern Germany, parts of Italy, France, and Great Britain." From the dawn of neolithic times this race has been in contact (few in numbers at first) with the more or less dense dolichocephalic peoples of the country, belonging probably to the old quaternary race of Laugerie-Chancelade, or to its descendant, the race of Baumes-Chaudes-Cromagnon. In the second half of the neolithic age an invasion of northern dolichocephals took place; and toward the end of the bronze age new, tall, fair, dolichocephalic peoples (Hallstatt and La Tène) appeared from the east and north. In Switzerland can still be found individuals representing man of the lake-dwellings of the stone and bronze ages, Helvetians, Burgundians, Alemanni, and even Italian Romans. But, in general, "in spite of diversity of language, the people of Switzerland are, for the greater part, of Celtic or Ligurian race."

Schweinfurth (G.) Ueber das Höhlen-Paläolithikum von Sizilien und Südtunesien. (Z. f. Ethn., Berlin, 1907, XXXIX, 832–915, 2 pl., 18 fg.) Treats of the paleolithic remains in the caves of Sicily (particularly Grotta del Castello, Grotta di Nuova at Termini-Imerese, Giuseppe Natale), — 18 types of stone implements, etc., are figured and described, besides numerous stones in "animal form," etc.; and southern Tunis (particularly caves near Gafsa) — 16 types of flint implements are figured and described. Correspondences between the Sicilian and Tunisian forms are noted; indeed the Gafsa caves produced no forms that do not find their analogues in Sicily. No distinctly neolithic implements were met with at Gafsa. It is difficult to decide whether the Termini-Imerese caves represent the pre- or the post-Solutrean.

—— Ueber A. Rutot's Entdeckung von Eolithen im belgischen Oligocän. (Ibid., 958–9.) Discusses Rutot's discovery of eoliths in the Belgian Oligocene near Boncelles, south of Liège, which S. accepts as genuine, believing that man was present in this region "before the Oligocene sea extended over it."

Sittoni (G.) Le Cinque Terre. I. Biassa, Golfo della Spezzia. (A. p. l'Antrop., Firenze, 1907, XXXVII, 295–304.) Brief account of the country and people of Biassa on the Gulf of Spezia. In the complex population appears everywhere the prevailing Arab-Kabyle blood. Two cranial types are noted.

W. (H.) Les juifs d'Alsace avant le révolution. (R. Éc. d'Anthr. de Paris,

1907, XVII, 393–7.) Cites evidence showing the harsh treatment of the Jews in Alsace previous to the Revolution of 1789.

Wateff (S.) Taches pigmentaires chez les enfants bulgares. (Bull. Soc. d'Anthr. de Paris, 1907, V^e^ s., VIII, 231–48, 22 fg.) Describes 20 cases (17 Bulgarians, 2 Jews, 1 Bohemian; 8 boys, 12 girls; under one year 6, over two years 4; urban parents 11, country 8) among 3500 children belonging chiefly to the district of Sofia in southwestern Bulgaria, of "pigment spots" ("Mongolian spots"), with other anthropologic data. Among the facts brought out are: All children in the same family do not have "spots." The "spots" can appear several months after birth. They occur about the same in both sexes. The number of "spots" is variable, also the form, size, etc. The color is light blue, dark blue, and (rarely) brown. The "spots" present no special pilosity. They are localized, with rare exceptions, in the sacro-lumbar region. These "spots" occur in various races. The age of the child does not seem to influence the intensity of the coloration. The pigment arises in the deep layers of the skin. In the discussion Dr Rivet pointed out that in Ecuador the "blue spots" are regarded as undeniable proof of Indian blood in whites.

Weissenberg (S.) Krankheit und Tod bei den südrussischen Juden. (Globus, Brnschwg., 1907, XCI, 357–63, 3 fg.) Treats of disease and death and their folk-lore among South Russian Jews: Origin of disease (attributed often to the "evil eye," epidemics ascribed to bad life of some member of community), amulets, charms, folk-remedies, change of name in severe cases, "grave yard measuring" of patient, death-beds (iron bed-steads and hen-feathers bad), treatment of dying and dead (cleansing, etc.), clothes of dead (not to be foreign), burial and funeral-procession, ceremonies at grave, beliefs about soul of dead (wanders for 8 days in the air, enters house, etc.; the dead assemble nightly in the synagogue to pray).

—— Beitrag zur Anthropologie der Juden. (Z. f. Ethn., Berlin, 1907, XXXIX, 961–4.) Gives results of head-measurements of 34 Aaronites and 12 Levites as compared with 100 other Jews, showing the former to be as short-headed and broad-faced as the latter in general, the range of the cephalic index being respectively 78–88, 78.2–89.1, 73.7–88.6. The percentage of blonds is also about the same. The nose, however, is a little more "Semitic" with the Aaronites and Levites. They represent thus the same anthropological type. Each group counts about 10 per cent. of the total population of Jews in Russia and Germany.

Wiegers (F.) Neue Funde paläolithischer Artefacte. (Ibid., 718–29, 14 fg.) Describes flints from the Diluvium of Thuringia and Saxony — new finds at Ehringsdorf near Weimar, Rabutz near Halle, Osterode, Hundisburg, and Neuhaldensleben.

Zaborowski (S.) Relations primitives des Germains et des Finnois. (Bull. Soc. d'Anthr. de Paris, 1907, V^e^ s., VIII, 174–9.) Treats of the Teutonic element (e. g., *kana*, 'hen,' *akana*, 'straw,' *kagra*, 'oats,' *knokka*, 'mattock,' *Venājā*, 'Veneti,' etc.) in the Finnish languages. According to Z., "it was at the south of the Gulf of Finland, on the Baltic littoral opposite the island of Gotland, that the contact between Teutons and Finnish peoples took place, that gave rise to these loan-words and the transference of culture represented by them. This occurred in the 1st century A.D., when the shore of the Baltic from the Gulf of Finland to beyond the Niemen was Finnish.

—— Le passé préhistorique de la Bohême. (R. Éc. d'Anthr. de Paris, 1907, XVII, 362–6.) Résumés (from preface to forthcoming work in German) the data concerning the prehistoric past of Bohemia in the publications of Pic. Quaternary man existed in Bohemia and left his traces there; there appear to be no neolithic dolmens or cromlechs, though stone circles and menhirs occur; the neolithic people of Bohemia were of the Hôckergräber type; bronze culture came in by the southwest; during the age of bronze the *Hügelgräber* type settled in the upper Moldau basin; the La Tène culture appeared already developed into the *Hockergräber* territory.

AFRICA

Adams (G. A.) Die Banôho und Bapuku in Kamerun. (Anthropos, Salzburg, 1907, II, 1022–8.) Historical notes on the Bantu Banôho and Bapuku of the Cameroons, with comparative grammatical sketches of their languages. Though closely related, the two tongues do not reach unity of speech.

Balmforth (R.) The moral development of the native races in South Africa. (Intern. J. Ethics, Lond., 1908, XVIII, 137-51.) According to B., the churches and missionary societies are inadequate to the work of education, which should be undertaken by the State. The education up to date has been too bookish and intellectual. Strength and morality won through industrial training, not serfdom, are necessary. South Africa will never be wholly a white man's country, nor wholly a black man's country. Harmony and coöperation of races must exist.

Brun (—) Notes sur les Croyances et les Pratiques religieuses des Malinkés fétichistes. (Anthropos, Salzburg, 1907, II, 722–9, 942–54, 2 pl.) Treats of the religious beliefs and practices of the West African Malinkés (Mandingo family): Cult of the dead (theories as to the dead, sacrifices, libations, offerings, etc.); belief in spirits and the cult observed with respect to them; the cult of Nama (a good deity), its organization, sacrifices, initiations, and secret societies, etc., their nocturnal sorties); the idea of God among the Negroes (divine name, origin of belief in God probably not due to Mohametan influence, worship of no special sort outside of two kinds of offerings). The Malinké word for God, *Ngala*, is the Arab *Allah*.

Brussaux (—) Notes sur les Moundans. (B. Soc. d'Anthr. de Paris, 1907, V^e^ s., VIII, 273–95, 4 pl., map.) Treats of habitat, origins (from the Mandara mtns.), racial type fine, (well-built, strong), character (formerly warriors, robbers, and hunters, now agriculturists and cattle-raisers), tattooing, clothing and ornament (women nude till marriage), family and domestic life (polygamy, dowry, position of women free and independent, affection for children, no slaves except prisoners of war, slave's position not hard), religion and superstition (mild fetishism, three deities — *Massim Biambé*, creator and master of all; *Pébéli*, male god; *Mébélé*, female god, metempsychosis, Islamizing now taking place through Haussa influence), festivals and ceremonies (birth, death, millet-harvest), dances (some slow, others violent, harvest-dances, special dance at Fouli), houses, furniture, utensils and tools (architecture *sui generis*, granaries resemble old *burg* of the Vosges), villages, plantations, domestic animals (horses, cattle, sheep, goats, etc.; fowls, pigeons; dog changed to watch-dog), food (almost entirely vegetal, fond of milk and its products; Moundans are poor hunters and mediocre fishermen), industries (few and rudimentary, weaving, dying, poor smiths, pottery solid and well-made; with the establishment of the Haussas in the land, the Moundans are more and more abandoning manufacture for agriculture), weapons (neglected, no special weapon), musical instruments (mostly borrowed from Mohammedans), political organization (familial, no single over chief). The Moundans are in general one of the most advanced races of the Chari region.

Camboué (P.) Notes sur quelques mœurs et coutumes malgaches. (Anthropos, Salzburg, 1907, II, 981–9, 2 pl., fg.) Treats of Malagasy customs and practices concerning childhood, childbirth, hair-cutting, tabus, etc.

de Clercq (A.) Grammaire du Kiyombe. (Ibid., 449-66, 761–94.) Detailed grammatical sketch of the Kiyombe (related to the numerous Fiote dialects) or Yombe language (Bantu) of the Mayombe region of the Congo Free State. It is spoken in several hundred villages.

Coll (A.) Los indígenas de Fernando-Póo. (Ibid., 387–91.) Treats of the Bubis, until recent years the only natives of Fernando Po; tribal name, origin-legend (from coast), tattooing, disease and medicine, food, religion (sacrifice to demon called *Morimé*), polygamy, dances (sexes separate), festivals, language (Bantu dialect). On p. 391 is given the Bubi version of the Lord's Prayer.

Dannert (—) Ueber die Sitte der Zahnverstümmelung bei den Ovaherero. (Z. f. Ethn., Berlin, 1907, XXXIX, 948–53.) Treats of the *okuha*, or custom of teeth-mutilation (removing the 4 lower incisors and making a Λ-shaped cut in the two middle upper ones), prevalent among the Ovaherero, and practised on both sexes at the age of 11–16 years. The mutilation is regarded as a tribal mark or ornament. The missionaries seek to abolish the custom.

Demonet (—) Un exorcisme Arabe. (B. Soc. d'Anthr. de Paris, 1907, V^e^ s., VIII, 310–13.) Describes the procedure of an Arab *marabout* to drive the evil spirit out of a young Arab suffering from mental affliction, by means of prayers, formulæ, the use of fire, perfumes, etc.

Durand (R. A.) Christian influence on African folk-lore. (Anthropos, Salzburg, 1907, II, 976–80.) Among such influences are certain "outward forms o

Christianity" said to prevail among certain people of the Zambesi valley who learned the art of the goldsmith from the Christian Goanese of the 16th and 17th centuries; the baptismal rites of the kings of Monomatapa, and perhaps also the "eating the body of God," cited from this region; the parable of the chameleon and the lizard, as told by the Mang'anja, near the south of L. Nyassa; certain ideas in some Kaffir songs, etc., concerning immortality, "the Son of God, who has scars on hands and feet"; "Mother Mary" in canoe songs of the lower Zambesi, Shire, and L. Nyassa, etc.

—— A short notice to the article "Die Religionen Togos." (Ibid., 742.) Note on the onomatopœic word for cock-crow, etc. The Mayano of the lower Zambesi use many such words. The coincidence between their speech and the Togo language in the matter of the word for "cock" is interesting.

Hamy (E. T.) Deux crânes de Oualolos, Zambesia. (Bull. Soc. d'Anthr. de Paris, 1907, V^e^ s., VIII, 271–2.) Gives measurements in comparison with Mozambique crania in general, of 2 female Walolo skulls now in the Paris Museum, one from Cundine, the other from Naquexa, both north of the junction of the Luala and the Quilimane.

Huguet (J.) Les soffs du Tell, du Sud et du Sahara. (R. Éc. d'Anthr. de Paris, 1907, XVII, 369–87.) Treats of the *soffs*, or associations for mutual assistance in defence and attack, among the Kabyles, Arabs, etc., of French North Africa — the Tell in Kabylia, Bon Sâada, Aurès; the Sahara (more numerous than in the Tell; the Touat oasis, etc. Just "as the violence of disputes and the tenacity of struggles have always been in direct relation to the degree of agitation of the *soffs*, so their attenuation is exclusively due to French influence in North Africa."

Karutz (H.) Tunesische Dolmen. (Globus Brnschwg., 1907, XCI, 309–10, fg.) Brief account of a dolmen between Enfidaville and Kairuan, central Tunisia.

v. Leonhardi (*Freih.*) Ueber einige religiöse und totemistische Vorstellungen der Aranda und Lontja in Zentralaustralien. (Ibid., 285–90.) Cites views of C. Strehlow, missionary of New Dettelsau, as to the existence of belief in a sort of supreme being among the Australian blacks. According to S. such is the *Altjira iliinka* of the Aranda (Arunta), and he attributes to the Dieri such a being named *Mura*. v. L. sees in the Aranda beliefs "a maternally inherited totem."

Mayr (F.) The Zulu Kafirs of Natal. (Anthropos, Salzburg, 1907, II, 392–9, 633–45, 12 pl.) Treats of medicine and charms (emetics, enemas, taken internally, chewed, snuffed, inhaled, poured into nose, ears, eyes, rubbed on, poultices, inoculation and cupping, strained out and sprinkled on, miscellaneous, etc.), clothing and ornaments of the "skin Zulu" before the advent of the whites and of the present "kraal Zulu" or "blanket and beads Zulu" at various periods of life, artificial disfigurements (painting, scarring, piercing ear-tips, amputation of finger-joint). Some of the beadwork is beautiful. Although witchcraft is prohibited by English law, "in out-of-the-way places, even now, it is practised all over Natal and Zululand."

Müller (F.) Eine anthropologische Merkwürdigkeit aus Togo, Westafrika. (Ibid., 741, fg.) Reports the frequent occurrence (20 times observed in 10 years) among the Akposos, Ananas, Kpeles, and Fos of the interior of Togo, of a *fossa* (not of artificial origin, but possibly a relic of embryonal life) above the cheek-bone at the level of the curve of the concha. It is regarded highly by the natives as a mark of beauty.

Naville (E.) The origin of Egyptian civilization. (J. R. Anthr. Inst., Lond., 1907, XXXVII, 201–14.) Author seeks to show from archeological and cultural data that "the civilization of the early Egyptian dynasties belongs to a nation formed by an indigenous stock, of African origin, among which settled conquerors coming from Arabia, from the same starting-point as the Chaldeans." This foreign element was not Semitic, but Hamitic like the natives on whom they intruded. In the Mediterranean an Hamitic civilization was first in date and "the races who were the bearers of the Egean civilization came from the south." The native stock N. identifies with the *Anu* or *Anti* of the inscriptions. The white race in remote antiquity extended farther south in Africa, and were later driven northward by the negroes. N. assumes, incorrectly, "the so-called embryonic posture" in burial to be "one of the distinct African features."

Northcote (G. A. S.) The Nilotic Kavirondo. (Ibid., 58–66.) Treats of the

Jaluo of the Dinka stock, on the N. E. shore of L. Victoria Nyanza — physical characters (fine race, but not facially beautiful), dress and ornament (huge skin hat, feather boa, beads, knee and ankle bells, etc.), weapons, political and social constitution (semi-feudal, village represents family, private property in land to some extent, exogamy, inheritance), marriage (many formalities, early contract), funeral ("the greatest ceremony of all"), religion, witchcraft and demonology (wizard feared, rain-maker esteemed), character and temperament (honest except as to cattle, love fun and laughter, comparatively peaceful and non-aggressive, painfully litigious, industrious, keen for trading, and possessing adaptability in learning the lower stages of all kinds of work, — soldiers, sailors, police, masons, carpenters, sawyers, blacksmiths, gardeners, "boys"). N. styles them "a valuable subject race."

Oetteking (B.) Kraniologische Studien an Alt-Ägyptern. (Korr.-Bl. d. D. Ges. f. Anthr., 1907, XXXVIII, 124–8.) Based on study of 182 mummy-heads chiefly from Sakkârah (av. cap. of 168 skulls, 1336.4 ccm.; range of cephalic index, 65.9–78.9). A peculiar formation of the occiput is noted. The fine (Fellaheen) and ruder (Copt) types are probably represented in very early times. O. thinks dolicho-meso-dolichocephalic evolution is shown.

Picard (*Lieut.*) Observations sur les Mahalfys. (Bull. Soc. d'Anthr. de Paris, 1907, V^e^ S., VIII, 206–10.) Treats of the manners and customs of the Mahalfy of southeastern Madagascar, "the most backward of the Malagasy peoples (houses and village life, clothing and ornament, art, tobacco-smoking, festivals, disease, death and funeral ceremonies, religion, agriculture, etc." Certain large tortoises are *fady*, or tabu. The *ombias*, or shamans, have considerable moral influence. "Palavers" are much in vogue.

Prietze (R.) Tiermärchen der Haussa. (Z. f. Ethn., Berlin, 1907, XXXIX, 916–39.) Native texts, interlinear and free translations with numerous explanatory notes, of three Haussa animal tales (Jackal and lion, The wise tortoise, The bird sudá), obtained from Hâǰ Ahmed of Kano, a characteristic and representative Haussa.

Roscoe (J.) The Bahima: a cow tribe of Enkole in the Uganda Protectorate. (J. R. Anthr. Inst., Lond., 1907, XXXVII, 93–118, 2 pl.) Treats of country, people (tall, fine race, features of women "like those of Europeans," men cattle herders), kings, government, clans and totems (14 clans each with its own sacred object, *muzira* or totem; of these 11 relate to the cow, 2 to man, and 1, that of princes, the monkey), food (chiefly milk), death and mourning (ghosts of common people have no special abode, but wonder about near the kraals; spirits of princes and princesses enter snakes), sickness, inheritance, adoption, marriage (child-betrothals), polyandry (two or three poor brothers sometimes have but one wife), birth, war (Bahima peaceable), religious beliefs ("supreme being," Lugaba, not worshipped; Kazoba, god of war, clan-deities, *mayembe* or fetishes), disease, "scape-cow," taboos, murder and manslaughter, hunting (only a few in certain clans are hunters), counting (Bahima have names for numbers up to 10; also signs given for numbers 1–10), time (year has three parts, day 10 divisions), dress (made from hides of cattle), magic, building and other industries (huts of primitive beehive kind; pottery and wooden milk-pots peculiar to themselves), brotherhood (by milk and blood), musical instruments (not a musical people; few songs; only musical instrument except drum is a sort of harp used by the women), amusements (wrestling both for men and boys; jumping; game like nine-pins), salutations, etc.

Sallé (M.) Les funérailles chez les Betsiléos. (Bull. Soc. d'Anthr. de Paris, 1907, V^e^ S., VIII, 165–7.) The author, a teacher at Vangaindrano in Madagascar, describes the funeral ceremonies of the Betsileo — treatment (exposure) of body, song and cattle-sacrifice, burial, "mock-corpse" and "cage," mourning, new clothes (after a year) for the dead, etc.

—— Baras. Région de Midongy: clans Zafimandom-boka et Zafimarozaha. (Ibid., 393–8, fg.) Treats of marriage (levirate), death, *bilo*-ceremony for cure of disease, art (statuettes, figures of animals), blacksmith (highly esteemed), etc. Marriages take place indifferently outside or within clan. No totemism. Drum used in all festivals and ceremonies. The physical characters of the Baras suggest negro origin or mixture. See *Zaborowski* (S.).

Stigand (C. H.) Notes on the natives of Nyassa-land, N. E. Rhodesia, and Portugese Zambesia, their arts, customs and modes of subsistence. (J. R. Anthr. Inst., Lond., 1907, XXXVII, 119–32, fg.) Treats of arts (interesting is salt-making from grass; bark cloth, mats, etc.), burial customs (the Ayao and Atonga bury body west-east, the Achewa north-south), dances (*china-wali* or menses dance, "picture dances"; pregnancy dances), law of succession, marriage custom, miscellaneous customs (filing teeth, mutilation as punishment, mourning, eating, cultivation, preparation and use of tobacco), history of tribes as narrated by themselves, medicine (real and charm), modes of subsistence (hunting, traps, honey, making fire), musical instruments (*ischlianga*, *gubu*), religion and superstition (spirits; vague idea of supreme being; many now Mohammedans), dreams, miscellaneous items (night as measurer of time, albinism occasional, "bush madness"). The natives concerned are the Angoni, Ayao, Achewa, Atonga, Manganja, Achapeta, etc.

Tessmann (G.) Ueber das Verhältnis der Fangneger zur umgebenden Tierwelt. (Z. f. Ethn., Berlin, 1907, XXXIX, 755–61.) Treats of the "observation-sense" of the Fang negroes as revealed in their tales and folk-lore. The German texts of two legends concerning the tree-creeper and the snail are given, one glorifying the child's love for the mother, the other warning against neglect to honor her. The cries of birds especially are imitated and interpreted, and the characteristicsof various species noted and remembered in language. The rhinoceros-bird, e. g., corresponds to our raven in folk-thought.

Torday (E.) *and* **Joyce** (T. A.) On the ethnology of the southwestern Congo Free State. (J. R. Anthr. Inst., Lond., 1907, XXXVII, 133–56, 4 pl., 2 fg.) Notes on the Ba-Samba, Ba-Sango, Wa-Ngongo (only tribe using spears), Ba-Bunda ("counter-changed ogee" pattern of sword-blade unique), Ba-Yaka, Ba-Yanza (pp. 137–41), Ba-Pindi (skilled in carving and weaving), Ba-Mbala, Ba-Huana, Ba-Lua, Ba-Kwese (145–51), Ba-Djok, etc. Except the coiled basketry of the Ba-Kwese (eastern and southern type), the swords of the Ba-Bunda and the spears of the Wa-Ngongo, the culture of all these tribes is "purely 'West African' in type." The Ba-Kwese have borrowed the *marimba* from the Ba-Lua.

Wolf (F.) Grammatik des Kögbörikŏ, Togo. (Anthropos, Salzburg, 1907, II, 422-37, 795-821.) Valuable detailed grammatical sketch (phonetics, noun, adjective, uumerals, pronouns, verb, adverb, conjunction, preposition, etc.) of the Kögbörikŏ (own term) or Akabu, the language of the E-gbŏ-té-bŏ of E-gbŏ-kŏ or Kebu, south of Adele, West Africa. Pages 814–21 are occupied by native texts (with translations, explanatory notes, etc.) of greetings, riddles, songs, tales (two from Ćakpogiwo, one from Kpálave. The Ewhe language is making inroads on the natives of this region.

Zaborowski (S.) A propos de l'origine sondanienne des Malgaches. (Bull. Soc. d'Anthr. de Paris, 1907, V^e^ s., VIII, 162–5.) Criticizes views of M. Grandidier (*L'origines des Malgaches*, Paris, 1901) and claims priority for certain opinions as to "the *rapprochement* between Malagasy and Sundanese, Nias in particular," e. g., in the funeral customs of the Betsileos.

—— A propos des Baras et les Malgaches à cheveux crépus. (Ibid., 398–9.) The physical characters of the Baras, etc., of Madagascar indicate a mixture of the black and yellow races. The existence among the Baras of the levirate points to ancient or profound Arab influence. See *Sallé*.

de Zeltner (F.) Traitement d'une ophtalmie du Sahel soudanais. (Ibid., 348.) Describes briefly the "cure" of a woman suffering from severe ophthalmia by a Moorish half-breed. Dancing and singing, anointing, breathing on the patient, suction by mouth and alleged extraction of "worms," took place.

ASIA

Besse (L.) Un ancien document sur les Todas. (Anthropos, Salzburg, 1907, II, 970–5.) Gives the French text of a letter of a priest in 1602 on the new mission of Todramalla, dependent on the college of Vaipicotta; and the Latin text of a letter by Father J. Fenecio in 1604 on the "Expeditio Totamalensis," containing a brief account of the Todas. The *Pallem* of Fenecio may be, according to B., the caste of the Pallers.

Bourlet (A.) Les Thay. (Ibid., 355–73, 613–32, 921–32, 15 pl., 1 fg.)

Treats of family and domestic life (man superior and sole inheritor; polygamy but not polyandry; girl-life and position of woman, child-birth; education; affection; wooing, betrothal, marriage, dowry; prostitution almost unknown; adultery and divorce); public life, government, chiefs, etc. (chiefs of village, district, tribe, province, — authority of the first, or *quan châu* formerly umlimited; before French occupancy each villiage was a sort of republic with frequent popular assemblies to settle matters of taxation, quarrels, disputes, and even punishments); religious life (spirit and demon lore, cult of spirits and cult of the dead not clearly distinguished; the *mo-mun*, or medicine-man, priest and his initiation; every fifth day, day of rest; ceremonies in honor of the *phî sân* or soul of last dead chief, the tutelary spirit of village and province; feast of *khau mo*, or "new rice"; dreams and omens, lucky and unlucky days); origin of the Thai according to their myths and legends (rudimentary cosmogony; deluge myth; writing given by the celestial being to the Thai), etc. At pages 927–931 B. discusses the Thai and Laotian alphabets, concluding that the Thai characters are only the primitive Siamese more or less corrupt or disfigured. The resemblance between Thai and Laotian is even more notable in the spoken tongue. In certain details of costume these peoples differ, and the Laotians are fervent Buddhists, as are not the Thai.

Cadière (L.) Philosophie populaire annamite. (Ibid., 955–69, 9 pl.) Continuation of monograph on Annamese folk-philosophy. Treats of *thân* (genii of various sorts — soil, hearth, etc.; some souls of men become *thân* after death), *ma* (spirits, often also souls of persons drowned, dying unusual or unnatural deaths, dishonored in burial, etc.), *qui* (demons, more wicked than the *ma*), *ông bâ* (souls of ancestors), etc. The Annamese live, move, and have their being in the supernatural.

d'Enjoy (P.) Le theâtre en pays chinois. (B. Soc. d'Anthr. d. Paris, 1907, V^e^ s., VIII, 353–63.) Treats of the Chinese theater: origin (dramatic art came from India with Buddhism), character (Chinese drama has never been, like Greek drama, a real art; to live by the theater is a disgrace: a Chinese proverb says "the author is a god, he creates; the actor is a monkey, he grimaces"; no woman adopts acting as a profession, it would disgrace her; actors are vagabonds, beggars, parasites), plays and music (heroic and military pieces, tragedies, historic poems, comedies and even vaudeville, — no censorship, realistic love scenes). In the comedies foreigners are made sport of.

Eugénien (—) Les Chiites d'aujourd'hui. (Anthropos, Salzburg, 1907, II, 406–21, 3 pl.) Treats of the modern Shiites: popular beliefs, sects and divisions, pilgrimages and sanctuaries (Nedjef, Kerbélâ, Sâmarrâ, Mechhed Rida), religious customs and usages (defilement and purification, death, fanaticism, temporary marriage, clergy, Hoseïn procession, etc.).

Gaupp (H.) Ueber die Geburtshilfe der Chinesen. (Z. f. Ethn., Berlin, 1907, XXXIX, 729–45, 10 fg.) Résumés the data in three Chinese books treating of midwifery, the *Ta shêng pien*, or "Birth of Man" (edited in 1715 by Gi čai čuše), the *Ta shêng yao chi*, or "What is worth knowing about Birth" (by a Shanghai physician, Fang Tung Yuan, *ca.* 1737), and the *Shê shêng pi p'on tsung yao*, or "Most important secret explanations of midwifery" (*ca.* 1638 A. D.). The last book contains a history of the development of the fetus by months, which is of no little interest. At page 743 are reproduced from this book the representations of the human fetus in each of the ten months of its life. In all three books innumerable recipes and remedies are given. Prediction of the sex of unborn children is believed in by the Chinese physicians, and in the third book here considered a theory of male and female births according to the months of the year in which conception occurs, is developed. Much curious folk-medicine and folk-psychology is here represented.

Gowland (W.) The burial mounds and dolmens of the early emperors of Japan. (J. R. Anthr. Inst., London, 1907, XXXVII, 10–46, 8 pl., 23 fg.) Treats of the *misasagi* or imperial burial-mounds (sometimes "double," but containing only one dolmen) peculiar to Japan, their construction, contents. Those at Nara, Mise, Unebi (Emperor Jimmu), Takatsuki (Emperor Keitai), Fujüdera (Emperor Chuai Tenno), Sakai (Emperors Nintoku and Richu), Domioji (Emperor Ingyo), double mounds near Ômuro etc., are considered in detail. The chief centers of dolmen-mound distribution are

four (Yamato, Izumo, Kyushu, Musashi, — perhaps also Bizen, later), indicating in the early part of the period "independent or semi-independent clans of the same race, armed with the same weapons, and having the same burial customs and religious beliefs."

Greenwell (—) Notes on a collection of bronze weapons, implements and vessels found at Khinámán to the west of Kermán in south-east Persia by Major P. Molesworth Sykes, C. M. G. (Ibid., 196–200, pl.) Treats of large pottery vessels (probably for burial purposes), globular vases of clay, bowls of hammered copper, bronze knives, pins, rods, leaf-shaped javelin-heads, axes (lion design), etc. According to the author, "so far as is known no similar cemetery or burials of a like kind have hitherto been found in Persia."

Hosten (H.) Prehistoric remains near Kodaikanal, Palnis. (Anthropos, Salzburg, 1907, II, 735–40.) Treats briefly of several groups of dolmens and two groups of kistvaens, and some low circles of earth and stones in the Palni hill region of northern Hindustan. Whether the "open dolmens" were tombs or dwellings is uncertain, and they yielded only fragments of red and black pottery of 5 or 6 different kinds, some beads, etc. Little also was found in the kistvaens, some of which had been previously rifled. There is need of scientific archeological research in this part of India.

v. **Le Coq** (A.) Bericht über Reisen und Arbeiten in Chinesisch-Turkistan. (Z. f. Ethnol., Berlin, 1907, XXXIX, 509–24, 2 pl., 10 fg.) Gives results of author's investigations and discoveries in the ruins of Idiqut Schari (old Uighur capital, the temples of the Murtuq, Toyoq, etc.), the ruins near Qomul, etc., during the year 1906. A complete temple of the Thang period (7–9th century) was discovered, and many Mss. and texts, including some in a hitherto unknown Iranic tongue, brought away. The author believes that "the East-Asiatic religious art is not autochthonous, but grew up on a Greek-Indian basis."

Lunet de la Jonquière (—) Les monuments de l'ancien Cambodge. (Bull. Soc. Archéol. de Bordeaux, 1906, XXVIII, 19–41.) After some historical notes, the author treats briefly ancient Cambodian temples and their surroundings; the apogee of this art was from the 9th to the 12th centuries A. D. At Angkor-Vat, Méaléa, etc., are innumerable sculptures, friezes, etc. The Brahmanic empire of Cambodia was a theocracy holding the great mass of the aboriginal element in harsh servitude. With the Thais came the gentler and democratic doctrines of Gautama.

Masip (J.) Del matrimonio chino. (Anthropos, Salzburg, 1907, II, 715–21.) Notes on marriage law, ceremonies, customs, etc., among the Chinese of the region of Xao-u, province of Fokien, — preparation for marriage, wedding, condition of married people.

Morel (G.) Note sur des silex taillés actuellement et employés industriellement. (B. Soc. d'Anthr. de Paris, 1907, V^e^ S., VIII, 349–52, 4 fg.) Describes the flints employed in the manufacture to-day at Bunjurkli, north of Magnesia, Asia Minor, of a sort of huge scraper for use on the threshing floor in separating the grain from the straw. Every year hundreds of these implements are sent to Smyrna, etc., whence they reach the Greek isles. Some of the flints employed are really prehistoric, being picked up in the fields, etc.

de Morgan (J.) Le plateau iranien pendant l'époque pléistocène. (R. Ec. d'Anthr. de Paris, 1907, XVII, 213–16.) The author believes that glacial conditions made the Iranian plateau uninhabitable during the end of the Pliocene and through the Pleistocene period. Hence the absence of traces of paleolithic or archeolithic industry (in Persia, also, the neolithic is little if any developed). Iran remained desert up to the first appearance of the metals.

de St. Elie (A.-M.) Les Racusiens, Cyriens, Maronites ou Monothélites. (Anthropos, Salzburg, 1907, II, 668–74.) Notes on the semi-Christian Racusians (according to the author *Kacûs* or *Rakâs* = Kûrus, Curus, an Arab form of Cyrus, patriarch of Alexandria, who decreed in 633 the adoption of monothelism), Cyrians, etc. To the Racusian sect belonged al'-Ahtal, the poet of the Ommiades. The Mards or Mardaites were also Racusians. For a long time Racusian, Cyrian, Maronite, Monothelite were synonyms.

Schlaginhaufen (O.) Ein Beitrag zur Craniologie der Semang nebst allgemeinen Beiträgen zur Craniologie. (Abh. u. Ber. d. Kgl. Zool. u. Anthr.-Ethnogr. Mus. zu Dresden, 1907, XI, Nr. 2, 1–50, 26 fg.) Detailed description and measurements of a male and a female Semang skull (those of the pa-

rents of the chief Dahabó (capacities, 1310 and 1210 gr.; cephalic indices 72.6 and 81.8) in comparison with other Semang material of Martin, Duckworth, Annandale, and Robinson, etc. Specific marks of the "diluvial man" of Schwalbe do not appear in these skulls, which belong clearly to *Homo sapiens*. Among the Semang brachycephals seem to be relatively numerous. Good bibliography.

Sergi (G.) Dalle esplorazioni del Turkestan. Frammenti scheletri umani. (A. d. Soc. Rom. di Antrop., 1907, XIII, 305–21, 10 fg.) Describes, with measurements where possible, fragmentary crania of 2 adults and 7 children from tumulus at Anau in Turkestan near the Persian border, — the various strata of the tumulus are thought to date from 8000 to 5200 B. C. Some of these crania may belong *ca.* 7000 B. C., and S. expresses the opinion that in the region in question, "from about the eighth millennium B. C. on, lived (the tumuli represent their scattered settlements) a people of the same origin as the Mediterranean stock (the crania are of this type)." This would confirm the views of those who make the Aryans a part of the Mediterranean race. In another tumulus at Anau (5200–2200 B. C.) was discovered a skull of a type suggesting the negro or negrito, but much inferior in form. These excavations and explorations were made by Prof. Pumpelly under the auspices of the Carnegie Institution of Washington in 1904.

INDONESIA, AUSTRALASIA, POLYNESIA

Abel (P.) Knabenspiele auf Neu-Mecklenburg, Südsee. (Anthropos, Salzburg, 1907, II, 708–14). Detailed description of the boys' spear-games and the game of spear-fighting, the favorite play of all boys, youths, and men among the natives of New Mecklenburg.

Baer (G. A.) Contribution à l'étude des langues des indigènes aux Iles Philippines. (Ibid., 467–91.) Gives vocabularies of 110 words in 22 Philippine languages and dialects compared with Malay: Tagal, 11 Negrito, Manguian, 3 Igorrote, Guinâan, Tinguian, Ilocan, Vicol, Pampangan, Panayan. Also a special vocabulary of 393 words of the Negrito of Montalvan and some 80 phrases in that language; brief supplementary vocabularies of the Negrito of Olongapó and Hermosa; and a song of the Negritos of Máon in Bulacan, and two Igorrote love-songs from Busao. The 9 Negrito vocabularies and that of the Igorrote of Busao were collected by the author. The Malay is from Wallace.

Basedow (—) Ueber Felsgravierungen hohen Alters in Zentral-Australien. (Z. f. Ethn., Berlin, 1907, XXXIX, 707–17, 10 fg.) Describes and figures ancient rock-carvings at Balparana and Wilkindinna (two water places formerly visited by the aborigines) near Yudanamutana, in Central Australia. These remarkable carvings were probably executed by the now extinct "Two-Tooth" blacks of the region. Among the figures are those of birds, snakes, tracks of animals, etc. Certain circles may be "corroboree signs," and the author thinks that the extinct gigantic bird *Genyornis newtoni* may be intended by some of the footprints. Other figures represent canoes, etc., also human beings perhaps. The great age of these carvings is shown by the patina with which they are now covered. Man may have been contemporary in this part of the world with these giant birds in the Tertiary period, but convincing proof is yet absent.

von Bülow (W.) Einige Bemerkungen über die Anthropologie der Samoa-Inseln. (Int. Arch. f. Ethnogr., Leiden, 1906, XVIII, 105–9.) v. B. holds, against Krämer, that the "best families" in Samoa are darker-skinned than the average Samoan (later immigrants). Three facial types are recognized: Melanesian, Polynesian, and Aryan (?). The author criticizes Krämer's illustrations from photographs of Samoans. At least three races are fused in the Samoan, and not perfectly now after 1000 years.

—— Beiträge zur malayo-polynesischen Ethnographie und Sprachforschung. (Ibid., 100–5.) Discusses the etymologies of Malayo-Polynesian words for "man," "foreigner," the names *Viti*, *Tahiti*, *Maori* and *Moriori*, *Manua*, etc. Samoan *tagata* (man) is traced to primitive Malayo-Polynesian *kanaka*, "child"; *Papâlagi*, "foreigner," means "child of sky"; *Tahiti* = "eastern."

Cunningham (D. J.) The head of an aboriginal Australian. (J. R. Anthr. Inst., Lond., 1907, XXXVII, 47–57, 3 pl.) Describes, with measurements (external ear and nose also) head of 47-year-old man (died in asylum from organic brain disease after 11 years of melancholic

stupor. Prominent supraorbital region; narrow, receding and sloping forehead; retreating chin and "almost complete absence of a mental prominence; unusually low height-index, 62.5; low cephalic index, 66; high degree of prognathism; Darwinian tubercle strongly marked, — "ear distinctly human in all its elements and parts." Lower nasal index due to distortion in transmission of head. Comparisons are made with Neandertal skull and anthropoids.

Egidi (V. M.) La tribù di Tauata. (Anthropos, Salzburg, 1907, II, 675–81, 1009–21.) After brief ethnographic introduction (habitat, dwellings, villages, dress and ornament, weapons, food, tobacco, industries, domestic and social life, spirits, treatment of dead), the author gives a grammatical sketch of the language and comparative vocabularies (pp. 1016–21) of Tauata, Oru-Lopiko, Fujuge, and Kuni.

Fritsch (G.) Ueber einen zweimal trepanierten Schädel. (Z. f. Ethn., Berlin, 1907, XXXIX, 702–3.) Treats of a skull from the Bismarck archipelago, belonging to an individual who had been personally known to Mr Parkinson. It had been trepanned twice, with an interval of 20 years, for an injury to the bone. A sort of trepanation on the forehead is often practised on healthy children as a protection against disease.

Hahl (A.) Das mittlere Neumecklenburg. (Globus, Brnschwg., 1907, XCI, 310–16.) Treats of the Melanesian natives of central New Mecklenburg, — industries (weapons and implements, musical instruments, grass and bark weaving; carving not in use, canoe-building extinct), trade and commerce, population (less than 10,000, almost two-thirds males, prostitution, decreasing births, etc.), houses, chiefs, war, tribal divisions, marriage and marriage-customs, puberty ceremonies, death and mourning, spirit-lore (soul, earth and tree spirits and other evil spirits), dances (harvest, change-of-wind, spear, women's and men's special dances, etc.) and songs, *ririnangu* (corresponds to *dukduk* of Gazelle peninsula), but no society like the *iniet*, festivals, etc.

Klaatsch (H.) Schlussbericht über meine Reise nach Australien in den Jahren 1904–7. (Z. f. Ethn., Berlin, 1907, XXXIX, 635–90, 4 pl., 7 fg.) Gives account of author's travels and investigations from May 1906 to April 1907 in Beagle bay, Northwest Australia (natives of Beagle bay, critique of Spencer and Gillen and of Howitt; no real totemism; *churingas* and soul-lore of the Niolniol; penis-mutilation; ethnographic specimens from Beagle bay; taboos); Cambridge-Gulf, Wyndham, N. W. Australia (brain of youth obtained; leaf-shaped spear-points; stone implements of paleolithic types); Port Darwin, Melville island, Northern Territory (atavistic foot-formation in a native of Port Keats; method of fighting; natives of Melville id.; pillar-graves, — from which skulls were obtained, — and their ornamentation; clothing and ornament of natives; body-painting; dances), Tasmania (stone implements, etc.). Dr K. was very successful in making collections of ethnologic objects.

de Marzan (J.) Le totémisme aux Iles Fiji. (Anthropos, Salzburg, 1907, II, 400–5.) Résumés the ideas of natives of Fiji ids. on totems principal (these are double, i. e. both animal and vegetal, and are not to be destroyed or eaten) and secondary (can be eaten with certain observances). Many tribal names have no analogy with the names of their principal totems. A tribe may have several secondary totems. Great respect was paid to the principal totems, and they were consulted in wars, disease, marriage, etc. An expectant mother was visited by the totem animal. Accessory totems were also known. A woman marrying in a foreign tribe honors both the totems of that tribe and her own. The tree-totem was probably the only principal totem at first, — according to Fiji legend, the place of origin of the people is a mountain of the province of Ra, called Nakau-vadra, from the tree *vadra*. A list of tree and animal totems of some tribes is given on page 405.

Meier (J.) Primitive Völker und "Paradies"-Zustand. Mit besonderer Berücksichtigung der früheren Verhältnisse beim Oststamm der Gazellehalbinsel im Bismark-Archipel, Neu-Pommern. (Ibid., 374–86.) Discusses the so-called "Paradise-condition" of primitive peoples, the natives of the Gazelle peninsula, Bismarck archipelago in particular. Religion (fear of evil spirits, cult of the dead), social relations (anthropophagy, war and murder, slavery, etc.), family-life (low position of woman, no real "family-sense"), household activities, food, clothing, etc. The author concludes that the evidence cited (and the

immorality also is great) indicates no "Edenic condition" for these aborigines, who nevertheless possess germs of religious truths, the sense of good and bad, etc., which make the labor of the missionary possible and profitable.

—— Mythen und Sagen der Admiralitätsinsulaner. (Ibid., 646–67, 933–41, 6 pl., map.) Gives, with occasional explanatory notes, the native texts (Moanus language) with interlinear translations of 18 creation myths, etc. (creation of earth and man, origin legends, creation of woman, origin of Poauai Channel, origin of thing from the belly of a snake, origin of fire, of the cocopalm, of the *areca*-palm, etc.), 4 legends of the confusion of tongues, 5 legends concerning sky, sun, moon, etc. (the 40 men who went up into the sky, origin of men from the sun, sun-path of good moon-path of bad, origin of dark spots in moon, why sun rises in east and moon in west). The source of these myth-texts is Po Minis, son of Po Sing, a former chief of the Admiralty ids., and a pupil of the author in the Catholic missions.

Mollison (T.) Die Maori in ihren Beziehungen zu verschiedenen benachbarten Gruppen. (Korr.-Bl. d. D. Ges. f. Anthr., Brnschwg., 1907, XXXVIII, 147–52, 8 fg.) On the basis of 24 different cranial characters and "the method of relative deviation," M. compares the Maori (16 skulls), studied by him with other Maori (Luschan, Scott), Chatham islanders (Scott), Lifu islanders (Bertillon), Australians, etc. M. concludes that Polynesians, Melanesians, and Australians represent a mixed series; and that among the Maori the Polynesian element by far predominates.

Planert (W.) Australische Forschungen. I. Aranda-Grammatik. (Z. f. Ethn., Berlin, 1907, XXXIX, 551–64.) Grammatical sketch of the Aranda (Arunta) language of Central Australia, with (pages 561–566) four brief native texts, with interlinear and free translations. The author, Hr. Wettengel, has lived several years in Australia and so familiarized himself with the Arunta and Dieri languages as to be able to preach in both. The Ms. has been revised by Planert.

Reiter (F.) Traditions tonguiennes. (Anthropos, Salzburg, 1907, II, 438–48, 743–54.) Gives native texts and interlinear translations, free versions, explanatory notes, etc., of the legend of the origin of the world and its inhabitants, and of the tale of the island of Eua and the deeds upon it of gods and devils, men and women. The first is the famous Polynesian myth of the fishing up of the lands by Maui.

Roth (W. E.) North Queensland Ethnography. Bulletin No. 9. Burial ceremonies, and disposal of the dead. (Rec. Austral. Mus., Sidney, 1907, VI, 365–403, 7 pl.) Gives particulars concerning death and burial among the aborigines of Pennefather river, lower Carpentaria coast, Princess Charlotte bay, Cape Bedford, Bloomfield river, Tully river, Russell river, Boulia, Cloncurry, upper Georgina river, Rockhampton, Brisbane. Death is thought due to "some enemy in the flesh or spirit dooming the individual to a particular form of death, e. g., by lightning, flood, spear." The differences between the funeral obsequies, observances, superstitions, etc., of men and women, warriors and others, children and adults, young and old, strong and healthy and weak or infirm, go back to the nature of the body from which the spirit working the evil has come. The matter is further complicated by the fact that the spirit may be associated with shadow, breath, heart, after-birth, ears, nose, and can thus be seen, heard, smelt, etc. Propitiation, therefore, becomes quite an art. According to R. the natives do not eat human flesh to acquire the moral or physical qualities of the dead person (no male, e. g., would wish to obtain the attributes of a woman or a child). The widow "becomes ultimately the property of one or other of her late husband's group- or blood-brothers." The deceased's hut is usually burnt or taken to pieces. Mourning colors are either white or red, or both, the latter being more indicative of the avenging sentiment.

Rougier (E.) Maladies et médecines à Fiji autrefois et aujourd'hui. (Anthropos, Salzburg, 1907, II, 994–1007, 4 pl.) Treats of tabus and observances concerning the elements, agriculture, fishing, health, the individual at various stages of life (before birth, at birth, at adolescence, married, complete man), struggle of the modern Fijians against the inroads of new diseases (diseases of the body and their treatment, Fijian surgery), etc. At pages 1006–1008 is given a list of medicinal plants (Fijian and Latin names, parts used etc.). The Fijians explain all diseases as due to violation or neglect of tabus or observances.

Schmidt (W.) Die geheime Jünglingsweihe der Karesau-Insulaner, Deutsch-Neuguinea. (Ibid., 1029-56.) Detailed account, after information given by Boniface Tamatai Pritak (a youth of 15 years, who had spent 3 years at the school of the Catholic mission of Tumleo) of the secret ceremonies practised by the Karesau islanders at the initiation of their youths, — the native texts of the songs are given, the other matter being in German only. There is also an initiation for girls.

Strehlow (C.) *und* **von Leonhardi** (M.) Die Aranda- und Loritja-Stämme in Zentral-Australien. I. Teil. Mythen, Sagen und Märchen des Aranda-Stammes. (Veröfl. a. d. Städt. Mus., Frankf. a. Main, 1907, I, xi. 1–104, 8 pl.). Gives German texts of 74 myths, legends, and tales of the Aranda (Arunta) of Central Australia, collected by C. Strehlow, since 1892 a missionary among the aborigines (Dieri and Aranda), with explanatory notes, etc. In the case of 5 of these an interlinear translation and a free version are given. Of the texts 64 relate to the "totem-procedures." In the plates accompanying this valuable monograph objects used in connection with the "totem ceremonies," etc., are shown. These aborigines have much lore concerning the *tjurunga* stones and pieces of wood (with ornamentations) which are figured in four of the plates. In these stories sun, moon, stars, Pleiades, Milky Way, comets and meteors, rainbow, whirlwind appear; also the kangaroo, emu, eagle, fishes, dog, snake, echidna, bat, duck, raven, lizard, frog, ant, wallaby, wildcat, opossum, rat, owl, crane, kingfisher, larvæ, and others. Among the noteworthy personages are the great good being Altjira, Mangarkunjerkunja (creator of men, etc.), Putiaputia (the teacher of the Aranda), the goddess Kaiala, Ara, the divine kangaroo, Tuatjumbinjua (who taught women and girls to dance), Atua arintja (the bad man), and Atua indatoa (the beautiful man), etc. A mass of information relating to primitive ideas and institutions is contained in these texts.

Wettengel (—) See *Planert*.

Zaborowski (S.) Métis d'Australiens et d'Anglais. (B. Soc. d'Anthr. de Paris, 1907, V° s. VIII, 385–93, 2 fg.) Résumés knowledge as to *métis* of Australian blacks and Europeans (Freycinet in 1800–4 met two or three; lately the existence of a considerable number has been reported, and in 1881 Cauvin believed they were on the increase). The inquiries of Z. reveal the fact that of the 3888 blacks of W. Australia in 1901, no fewer than 502 were *métis;* while in 1906 the latter had increased to 591, the pure-bloods having decreased some 250. The portrait of a young *métis* of Victoria shows refinement toward the European type. Others show sometimes the predominant Australian characters, in certain cases "repulsively so." In the discussion M. Baudouin cited an interesting case of marriage of a young French sailor and an Australian girl of 7 years. As a result of this paper and the discussion a permanent committee for the study of ethnic mixtures was appointed.

AMERICA

Ambrosetti (J. B.) Exploraciones arqueológicas en la Pampa Grande, Provincia de Salta. (Rev. Univ. de Buenos Aires, 1906, v, repr., pp. 1–199, pl., 173 fg.) Gives the results of archeological explorations in 1905 in the Pampa Grande of the province of Salta, Argentina, by Dr A., Dr F. Cervini, Dr C. O. Bunge, and Dr L. Maupas. Among the objects discovered were large numbers of burial-urns, together with many anthropomorphic urns, painted dishes, etc.; bone implements, pottery of various sorts (often zoömorphic and anthropomorphic in part; and frequently engraved with various designs), stone objects (axes, hammers, mortars, bolas, ornaments), bronze objects (*tokis* or ceremonial axes, pectoral plates and ornamented disks, bells, etc.). Interesting are the cairns or stone tumuli, and the *pedrera*, which seem to have been places of religious expression or ceremonial. Two types of culture are revealed by these investigations: 1. A type of ruder urns, pottery, etc., like that discovered by Boman in San Pedro de Jujuy, and in Carmen, Valle de Lerma, Salta. 2. A type of urns and other objects purely Calchaqui. Of these the first type is much more common. Sometimes the two types are mingled in one burial-place, but these graves were used at different periods. The people of inferior culture may have been of the same race as the Calchaquis, — the latter buried children, not adults (as did the former) in urns. At Rincón (Casa Patronal) a new valley-tribe of higher culture established itself by force,

as the pictographs in the Carahuassi grotto indicate, — and an Incasic tribe as some have believed.

Asmundsen's Polarexpedition. (Globus, Brnschwg., 1907, XCI, 367–8.) Résumés articles from geographical journals of London and Paris. Contains some notes on the Eskimo of Netchilli (domestic life, shamans, religion, etc.).

Dautzenberg (L.) Algunos datos bibliográficos acerca de la lenguas de las Américas meridional y central. (Anthropos, Salzburg, 1907, II, 990–3.) Cites as addition to the titles in de la Viñaza's *Bibliografía española de lenguas indígenas de América* (Madrid, 1892), a *Tratado de los Evangelios* published in Spanish and Quechuan at Lima sometime between 1641 and 1671. At pp. 991–2 D. quotes the first few paragraphs of the sermons in Quechuan and Spanish. The author also refers to Bishop Thiel's *Apuntes lexicográficos de los lenguas y dialectos de los Indios de Costa Rica* (San José, 1882) and J. M. Grimm's *La lengua Quechua, dialecto de la República del Ecuador* (Freiburg i. Br., 1896) and *Vade mecum para párrocos de Indios Quechuas* (Freiburg i. Br., 1903).

De Goeje (C. H.) Bijdrage tot de ethnographie der Surinaamsche Indianen. (Int. Arch. f. Ethnogr., Leiden, 1906, XVII, Suppl., 1–117, 16 pl.) The first part of this valuable monograph on the Indians of Surinam, based on the data of the exploring expeditions of 1901–05, treats of tribes and their distribution, clothing and ornament (of dancers in particular), settlements, houses, furniture, domestic animals, etc. (the Ojana have 7 types of houses, the Trio 4, of which 3 are the same as with the Ojana), food, fire, tobacco, hunting, fishing, weapons, pottery (that of Trio and Ojana not so good as Galibi and Arawak), cotton, weaving and plaiting (chief types are described), ornamentation, drawing, modeling, music (5 sorts of flute), population, customs, usages, etc., trade. Part II (pp. 31–111) is devoted to linguistics, extensive classified vocabularies being given of the Cariban Kalina, Trio, and Upurui, and one of 103 words of the "trade-langue" of the Indians and "Bush-Negroes."

Ehrenreich (P.) Ueber einen archäologischen Ausflug nach Mexiko und Yukatan im Oktober und November 1906. (Z. f. Ethn., Berlin, 1907, XXXIX, 752–754.) Notes on a visit to Tezcuco, Teotihuacan, Uxmal, Chichenitza, etc.

Friederici (G.) Die Wirkung des Indianerbogens. (Globus, Brnschwg., 1907, XCI, 325–30.) Treats, with numerous references to the literature of the subject, old and new, of the bow-and-arrow of the American Indians, with special consideration of strength and power of propulsion, skill in avoiding missiles, etc., devices for improving the weapon, protection for left hand, etc. Instances of powerful shots (piercing shields, men, or animals), length of shot, etc., are given.

Geoghegan (R. H.) Pri kelkaj rimarkindaj similajôj inter la antikvaj kalendaroj de la amerikanoj kaj la azianoj. (Intern. Scienca Revuo, Ĝenevo, 1908, V, 112–19.) General discussion of "some remarkable similarities between the ancient calendars of Americans and Asiatics."

Groeteken (A.) Bischof Aramentia O. F. M. und die Erforschung des Rio Madre de Dios. (Anthropos, Salzburg, 1907, II, 730–34.) Gives brief account of the life and works of N. Armentia, Bishop of La Paz, in connection with his investigations of the Rio Madre de Dios country and its Indian inhabitants. At p. 734 are given (from Armentia) the personal possessive and demonstrative pronouns in the Tacana proper, Araona, Pacaguara, Cavineña, and Mosatena languages. The second edition of Armentia's *Navigación del Madre de Dios* appeared in 1887.

Harnden, E. W. Indian pictographs in Pate Valley [California]. (Sierra Club Bull., San Francisco, 1908, VI, no. 4, p. 258–9, 2 pl.) Brief description of pictographs in Tuolumne cañon, Cal., which forms the northern limit of aboriginal work of this sort in the state. Their meaning has not been determined.

von Ihering (H.) Ueber die Verwendbarkeit der brasilianischen Dioritäxte zum Fällen von Bäumen. (Z. f. Ethn., Berlin, 1907, XXXIX, 746.) Notes reporting successful personal experiment in use of diorite axes of Brazilian Indians of São Paulo in felling trees.

Jetté (J.) On the medicine-men of the Ten'a. (J. R. Antlr. Inst., Lond., 1907, XXXVII, 157–88.) Treats of spirit and "devil" lore, medicine-men (one medicine-woman to five medicine-men), their power, social standing (influential, rich, respected, feared, — "the nearest approach to a chief, a priest, a physician"),

calling to the profession (by find a *karunik*, a bead-like object, after a dream, — a collection of such in a pouch or box is his amulet), mode of life (not different from fellows), foreknowledge and predictions (not always believed in), "healing" (sometimes showy and elaborate), taboos, "calling" fish or game by medicine-man, performance of tricks. At pp. 177–82 is given a list of foreign and native words used in this paper, and at pp. 182–5 a list of words and phrases used by the medicine-man. On pp. 185–8 are given native text and interlinear and free translation of a Ten'a legend, "The Cripple." Among the Ten'a "the name given to a small child is commonly the first incorrect or outlandish word which he or she pronounces, or which is said about him or her." They are "phenomenally credulous" of their medicine-men. These Athapascan Indians live in central Alaska and number some 1600–2000.

Lehmann (W.) Die altmexikanischen Mosaiken des ethnographischen Museums in Kopenhagen. (Globus, Brnschwg., 1907, XCI, 332–5, 4 fg.) Treats of two ancient Mexican mosaics now in the Ethnographic Museum at Copenhagen — one a mask in the form of a snake-head out of whose jaws looks a human head; the other (specially fine) is a head with a high feather-diadem — the tongue protrudes, and other things also suggest comparison with the ancient Mexican masks of the Aldrovandus collection in the *Museo preistorico* at Rome.

Mahoudeau (P. G.) Les primates et les prosimiens fossiles de la Patagonie d'après les travaux de M. Florentino Ameghino. (R. Éc. d'Anthr. de Paris, 1907, XVII, 354–61, 387–93.) Résumés the facts and theories in the recent works of Ameghino on the fossil primates and prosimians of Patagonia, particularly the *Homunculus patagonicus*, a monkey of such characteristics as to rank probably in the line leading to man and the anthropomorphic apes. According to Ameghino, the Homunculidæ, which were neither arboricoles nor climbers, but walkers erect or half-upright at least, are the primates nearest to the human type — they are "the ancestors of all the apes (except the Lemurs) of both the New and the Old World." And Patagonia was the scene of this highest mammalogical (including man) development. In the Araucanian stage of the more recent geological strata A. finds traces of very rudimentary human implements.

Prowe (H.) *und* **Lehmann** (W.) Quiché-Sagen. (Globus, Brnschwg., 1907, XCI, 305–6.) Discussion and criticism of Quiché etymologies set forth by P. Dr L. objects to those suggested for *imox*, *Hunahpu* etc.

Rivet (*Dr*) Essai sur les peuples sud-américains. (R. Scientif., Paris, 1908, 3e S, IX, 257–69.) Treats of the past, present, and future of South America, "the only European colony on tropical soil." The white population consists of "transplanted folk." Equality is proclaimed everywhere, but nowhere else do pride of race and prejudice of birth flourish more,—aristocrats, party, priesthoods rule in republics. Castilian arrogance has fed upon the conquered aborigines. Traditionalism and the religious spirit mark the Spaniard. The South American is psychologically the product of the mingling of the Spanish race and the Indian, controlled by the geographic situation. There is in formation a new *American* race, born of European and Indian, which, with the coming of political stability, will have vitality and energy enough to exploit the land and carry on the work of culture and civilization.

Teschauer (—) Ueber den gegenwärtigen Stand der Ethnographie in Brasilien. (Anthropos, Salzburg, 1907, II, 499–507.) Résumés recent ethnographic investigations in São Paulo (*sambaquis* partly pre-Columbian, partly post-Columbian, partly of natural origin; T. thinks their importance has been exaggerated), Rio de Janeiro (Lacerda's studies of primitive man in Brazil: 1st period, cave-man of Sumidouro; 2d period, *Sambaqui* man; 3d period, man of Pacoval, — the last period immediately precedes the discovery of America, between the two first millenniums elapsed; in Bahia the white-negro *mêtis*, in Pará and Amazonas the Indian-white *mêtis* dominated, — it is the Indian-white intermixture that still goes on; the products of crosses between white and negro are esthetically finer and more regular than of those between white and Indian), Bahia (investigations of C. Barreto in the *casas fortes* and other ruins of Amargosa, Feira de St. Anna, etc., the *murundús* or burial mounds, inscriptions, native nephrite, etc.), Belém do Pará (Dr E. A. Goeldi's investigation of the catacomb-like graves of the Cunany In-

dians, anthropomorphic urns like those of the island of Marajó; Dr N. C. de Senna's studies of the stone age in Brazil), etc.

Thibon (F.) La región mastoidea de los cráneos Calchaquiés, estudio hecho sobre 100 cráneos. (An. Mus. Nac. de Buenos Aires, 1907, XVI, 307–46, 16 pl.) This, the first anthropological thesis for the doctorate in S. America, is a detailed study with measurements and drawings of the mastoid region of 100 "Calchaqui" (2 defective on left side) skulls, of which 54 are in the Museo Nacional and 46 in the Ethnographic Museum of the University. Among the results noted are these: The mastoid apophysis is larger on the left and not, as in European skulls, on the right; the digastric crest predominates; the mastoid foramina occur less frequently, and less often on the right side (in European, left); the external petrosquamous suture is much more common than in European skulls and the internal attitude of the mastoid apophyses less. This monograph has also appeared in pamphlet form (Buenos Aires, 1907, pp. 72).

Torres (L. M.) Arquelogia de la cuenca del Río Paraná. (R. d. Mus. de La Plata, Buenos Aires, 1907, XIV, 53–122, 45 fg., map). Gives results of archeological investigations of Zeballos and Pico, Mazzanti, Ambrosetti and the author himself in the region between the Paraná and Uruguay. The tumulus of Campana, near the city of Buenos Aires, and that of the river Ùsuró at Goya in Corrientes, and the paradero of Gaboto are treated in detail and the finds described, human remains, instruments of stone, bone (of which some are engraved), pottery (zoömorphic, geometrical ornamentation, etc). The zoömorphic and anthropomorphic type of pottery found at Campana and Goya, etc., does not occur in the islands in the south of Entre Rios or in those of the western part of the Delta. The only human skull of those discovered at Campana which came into the Museum has an index of 71.28 and may be related to those from the insular region of Entre Rios and the neighboring parts of Uruguay. Much of the domestic *outillage* from the Campana tumulus closely resembles that of the Delta and Entre Rios.

Vram (U. G.) Su d'una singolare urna funeraria dell' America del Sud. (A. p. l'Antrop., Firenze, 1907, XXXVII, 291–3, 2 fg.) Describes a "bath-shaped" urn containing a little mummy, from Colombia, now in the Ethnographic Museum, Rome. On the bottom is scratched a sort of "Greek" design. The measurements of the mummy are given.

FOREIGN NOTES

Recent Excavations at La Têne

In accordance with the plans to which we have already alluded,[1] the committee in charge of the exploration of La Têne began work on the station early in March 1907, and continued until the middle of June, when, on account of the high water in the Lake of Neuchatel caused by the melting of snow and ice in the Juras, it was necessary to cease operations until autumn, when they were again resumed.

La Têne — the name applied to the only known settlement or station dating from the Iron age on the Lake of Neuchatel, Switzerland — was situated near the northeastern corner of the lake, at the end of the small stream — La Thièle — which flowed from that lake to the Lake of Bienne.

Some thirty years ago a canal was constructed between the lakes. It followed the general course of the stream, but was so deepened as to cause the lowering of the surface of the Lake of Neuchatel about three meters. Now as the southern, or Neuchatel, end of the canal is a short distance east of the old water course, the site of the ancient pile settlement is at the present time dry except when the waters of the lake are unusually high.

It would be difficult to tell the exact depth of the water at the time the site was occupied, but it was probably not more than two meters, rather less than under some of the older settlements of the Bronze or Stone ages.

Subsequent to the time La Têne was last occupied, which was probably during the first century of the Christian era, the stream changed its course, thereby washing away some of the ancient substructures and covering others with sand and gravel. Consequently it is rather difficult to designate the exact bounds of the ancient village.

In fig. *a*, pl. XVI, is shown a view of the site as it appeared March 26, 1907, a few days after the beginning of the exploration. The strata in which the objects occur are below the temporary track shown in the photograph. The mass of sand and gravel which is shown being cut away by the workmen has been deposited since the site was abandoned.

In making the photograph shown as fig. *b*, the camera was placed on

[1] *American Anthropologist*, 1906, vol. 8, no. 4, p. 737; also in *Man*, 8, London, 1907.

the top of the elevation visible on the right of the track, in the foreground of fig. *a*. As will be seen, the deeper parts of the excavation are filled with water. This came in from the lake and was the reason why the work was stopped in June.

Unfortunately the discoveries were of no special importance and only one new type was found. This resembles a light hammer and consists of a slender bar of iron having at one end a transverse piece extending about 4 cm. on either side. The other end of the bar is set into a bone handle, which had been smoothed and rounded.

Among the objects discovered are several rather large knives, two horse bits, a number of iron rings of different sizes. Several adzes and axes had, remaining in the sockets, parts of their wooden handles. Numerous fibulæ of La Têne II type were found, but all were in a bad state of preservation. One small example of red enamel was also recovered from the excavation.

Work is to be continued on the site until the entire area has been explored and as a result much valuable material will probably be brought to light. An account of the work during the year 1907 is about to be published by the Musée Historique of Neuchatel, Switzerland.

D. I. BUSHNELL, JR.

THE BEGINNING OF IRON

During the meeting of the British Association for the Advancement of Science, held at Leicester, England, July–August 1907, Professor W. Ridgeway, of Cambridge, presented a most interesting paper on "The Beginning of Iron."

A summary of the paper, quoted from p. 644 of the official report of the meeting, follows:

"Formerly it was generally believed that iron was the gift of Africa to mankind, and, if not of Africa, most certainly of Asia. Modern research has shown that Egypt did not use iron until about 800 B. C., that the Libyans were not using it in 480 B. C., and that the Semitic peoples did not use it from a remote past, but that they borrowed it comparatively late. I urged in 1896 and in 1902 that Central Europe was the true center of the use of iron as a *metal*, and that it was first diffused from Noricum. At Hallstatt iron was seen coming into use first to decorate bronze, then to form the edge of cutting implements; next it gradually replaced bronze weapons, and finally took new forms of its own. Everywhere else iron as a *metal* came into use *per saltum*. Man probably found it ready smelted by nature, as the Eskimo discovered it at Regent's Bay

a. Beginning the Excavation, March 26, 1907

b. Showing the Excavation filled with Water from the Lake, July 12, 1907

EXCAVATIONS AT LA TÊNE

and at Ovifak. Some still imagine that it was used very early in Egypt, because its name occurs in early documents; but this is readily explained, since hematite was known and used very early in Egypt, and the same material was used very commonly in the Ægean long before the Bronze age. But it was treated not as a *metal* to be smelted, but as a stone to be ground into axes and beads. The Egyptians thus knew the mineral and had a name for it, which they continued to employ when they had learned its use as a *metal* from Europe. Others also cling to the belief that iron was worked in Central Africa from a remote time. But in Uganda, which was in touch with Egypt by means of the great lakes and the Nile, iron, as I am informed by the Rev. J. Roscoe, became first known in the reign of a king about nineteen reigns back (about five hundred or four hundred years ago). This renders it very unlikely that the metal was worked until very late in Central Africa. It is certain that the peoples beyond the Caspian, as well as those along the Indian Ocean, did not use iron till quite late; that India herself did not know it at an early date, and that Japan got it only about A. D. 700; yet some still imagine that it must have been known to the Chinese from remote antiquity. But the earliest mention of iron in Chinese literature is about 400 B. C., whilst a bronze sword belonging to Canon Greenwell has an inscription read by Professor Giles which dates it between 247 B. C. and 220 B. C. There is evidence that bronze swords were being used till A. D. 100, and that it was only then that iron swords were coming in. It is now clear that the use of iron as a *metal* is due to Central Europe."

Old North American Club in the Leiden Museum

Many of the older European museums, and especially those in the countries which had intercourse with the colonies during the early days, possess rare old objects from North America. These were carried back by the traders or explorers and kept as curiosities, later to find their way to museums where they are now preserved. Such is probably the history of an excellent old club in the Rijks Ethnographisch Museum at Leiden. Although nothing is known of its early history, it was evidently taken back from New Amsterdam, as it is the type of weapon used by the Iroquois and eastern Algonquian tribes. It is made of maple, turned dark with age and highly polished from use. The dimensions are: extreme length, 555 mm.; greatest diameter of the ball or knob, 102 mm.; thickness of the handle, 30 mm.

As shown in the accompanying figure 89, there is a perforation above the handle or grip, while on the outer edge, near the perforation, are

twelve small notches. The weapon is not decorated, but in form it closely resembles a highly decorated example in the Ashmolean Museum, Oxford, which has already been described (*Man*, 59, London, 1907). The specimen is also figured in Mr Holmes' paper on Tomahawks on page 271 of this issue of the *American Anthropologist*.

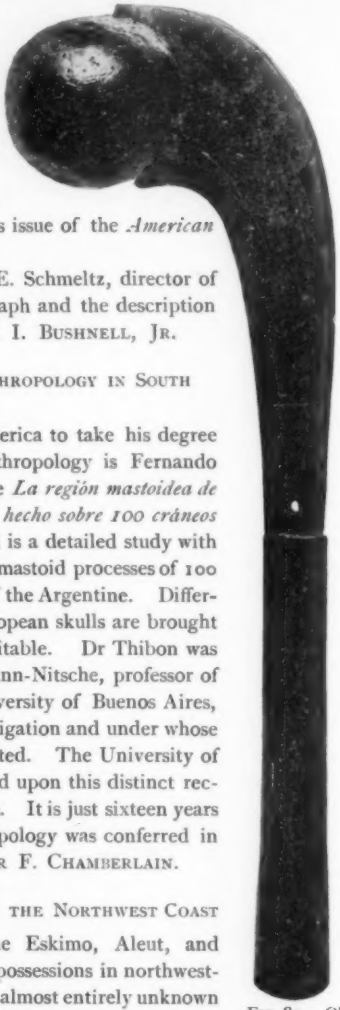


FIG. 89.—Old North American Club in the Leiden Museum.

We are indebted to Dr J. D. E. Schmeltz, director of the Leiden Museum, for a photograph and the description of this rare specimen. D. I. BUSHNELL, JR.

FIRST DOCTOR'S THESIS IN ANTHROPOLOGY IN SOUTH AMERICA

The first student in South America to take his degree of Doctor of Philosophy in Anthropology is Fernando Thibon, whose thesis bears the title *La región mastoidea de los cráneos Calchaquíes. Estudio hecho sobre 100 cráneos* (Buenos Aires, 1907, pp. 72), and is a detailed study with measurements and drawings of the mastoid processes of 100 skulls from the Calchaqui region of the Argentine. Differences between Calchaqui and European skulls are brought out. The work done is most creditable. Dr Thibon was a student under Dr Robert Lehmann-Nitsche, professor of anthropology in the National University of Buenos Aires, who suggested the subject of investigation and under whose auspices the monograph was executed. The University of Buenos Aires is to be congratulated upon this distinct recognition of anthropological science. It is just sixteen years since the first doctorate in anthropology was conferred in North America. ALEXANDER F. CHAMBERLAIN.

COLLECTION OF OLD OBJECTS FROM THE NORTHWEST COAST

A collection of objects of the Eskimo, Aleut, and Tlingit, from the ancient Russian possessions in northwestern America, which have remained almost entirely unknown for nearly a century in the Imperial Arsenal of Tzarskoe-Selo at St Petersburg, Russia, were recently transferred by order of the Emperor to the Alexander III Museum. Pro-

fessor Th. Volkov, who is in charge of the Museum, is engaged in studying the material and in preparing an account of it, which will probably appear toward the close of the year as the first purely scientific publication of the Alexander Museum. Professor Volkov states that the collection is a remarkable one, and having been collected at a period when the tribes of the Russian Possessions were practically unmodified, it possesses great ethnological importance. WALTER HOUGH.

ANTHROPOLOGIC MISCELLANEA

Pan-American Scientific Congress. — In accordance with the resolutions of the Third Latin American Scientific Congress of Rio de Janeiro, a Fourth Scientific Congress (First Pan-American) will meet in Santiago, from December 25, 1908, until January 5, 1909, under the auspices of the Government of Chile. Congress has made an appropriation of $35,000 to pay the expenses of a delegation from the United States, of which body Mr W. H. Holmes, of the Bureau of American Ethnology, has been appointed a member. Of the general topics to be considered by the Congress, the Third Section is to be devoted to "Natural, anthropological, and ethnological sciences," divided into the following themes:

GENERAL THEMES

1. Concerning the antiquity of the American aborigines according to geologic and anatomic investigations.
2. The classification and geographic distribution of American races and sub-races.
3. Concerning the origin of American culture and civilization.
4. Concerning the social and moral organization of the American aborigines.
5. Did the troglodyte or the cave dweller exist in Chile or in other tribes of America?
6. Magic and religious practices (including ideas concerning death and of the future life).
7. Concerning animism among the American tribes.
8. Manner of communicating ideas by means of signs, articulate language, hieroglyphics and writing (mnemotechny).
9. Comparative study concerning the origin, development, and geographic distribution of the principal arts or industries, with their applications.
10. What was the relationship between the Araucanos and the neighboring tribes?

SPECIAL THEMES

1. Influence of Peruvian domination in Chile.
2. Metal and stone utensils of the aborigines.
3. Animals and plants used by the aborigines of Chile.
4. Caves in Chile.
5. Writings and drawings of the ancient Chileans.
6. Kjokenmöddings (kitchen middens or leavings on the coast of Chile).

7. Religious beliefs of the Chilean aborigines.

8. Chilean pictures and engravings: hills, caves, stones, walls, etc.

9. Concerning the fabrics of the Araucanian Indians.

10. Concerning the origin of metal earrings used at the present time by the women of the lower classes of the Chilean people.

11. Concerning navigation among the indigenous tribes of Chile; its origin and development.

12. Inca ornamentation described according to the archeological objects now in our National Museum.

13. Study of the pre-hispanic necropolis of Calama, department of Antofagasta. Ditto of that of Antofagasta of the Sierra (Atacama) and of Punta Pichalo.

14. Description of utensils of the paleolithic and neolithic epoch found in Chilean territory (National Museum).

15. The ethnographic and linguistic provinces of Chile.

16. Concerning Chilean folklore.

17. Features of primitive animism in the lower classes of the Chilean people (superstitions, etc.).

18. A complete biography [bibliography?] of anthropology of Chile.

The Seventh Section, that of Social Sciences, will be devoted, among others, to the following themes:

American History

Prehistoric epoch

1. Origin of the American peoples. Their successive migrations.

2. Development of the primitive American civilizations, chiefly those of Mexico and Peru. Their influence on the colonial epoch.

3. Comparative study of the aboriginal languages of America and the Asiatic tongues.

Colonial epoch

1. Influence of the American colonies on the foreign policy and the economic development of the European nations. To what extent did the conquest of the New World engender conflicts and rivalries among those nations and disturb their political equilibrium?

2. Historical criticism of the methods of colonial expansion of the European nations in America.

3. Historical criticism of the colonial dominion of the European nations on the American Continent, especially from an economic standpoint. Comparison of the English, French, Spanish, Portuguese, and Dutch colonial systems.

4. Comparisons of the system of colonization employed by the European nations during the sixteenth century in America, and the system which they

have subsequently employed, especially during the course of the nineteenth century, in Asia, Africa, and Oceanica.

5. Ethical composition and economic and social organization of the American colonies, as compared with Europe. Importance of this factor in the development of the civilization of our continent.

6. Social, political, and economic influence of the mother countries over the American colonies.

7. Operation of the institutions of these mother countries in the colonies. Modifications which they underwent and chief causes thereof.

8. Special institutions which the mother countries created for the colonies of the New World. Their object and result.

9. Factors which contributed toward the formation and development of the colonial mind and of the American character.

10. Picture of the colonial epoch. Life and customs. Wherein they resembled and wherein they differed from the mother countries.

EPOCH OF EMANCIPATION

1. Causes of the emancipation movement in the colonies of America. Comparison of the causes which led to the independence of the English colonies and those which led to the emancipation of the Latin-American colonies.

2. Degree of preparedness of the American colonies for independent existence.

3. Influence of the Napoleonic wars and of their political results on some military leaders of the emancipation movement.

4. Mental characteristics of the first American statesmen. Monarchical tendencies in some of them.

5. Reasons why the republican and democratic organization has predominated in the American nations.

6. Explanation why the English colonies formed a single nation upon becoming independent, while the Latin-American colonies were unable to form a federation or even a confederation.

EPOCH OF THE REPUBLIC

1. Significance of the struggles for independence in the formation of the national character of the American nations.

2. Influence of the civilization of Europe on that of America.

3. Since gaining its independence, to what extent has America been socially and politically different from Europe, and to what extent has it come to have a civilization, interests, and problems differing from those of Europe.

4. The political, economic, and social development of this continent. Institutions, government, administration, condition of the people, property, culture, sciences, arts, philosophy, political ideals.

5. Ethnographic composition and geographical position of the American countries as factors in the development of their civilization.

6. Influence which the expansion of the United States has had on the growth of its own civilization.

7. Movements toward union and federation in Latin America: their causes and effects.

8. Should the civilization of America be studied and expounded from the same historical standpoint as that of the Old World? What method should be followed in writing the history of the New World in order to bring out the peculiar features of its civilization and show the problems of every kind with which it has to deal?

9. Sources of American history. Historical bibliography and literature.

In addition to the foregoing, and also under the section of Social Sciences, the following topics are included: Public international law, Conventional international law, Diplomatic history, International policy, Political economy, Social economy, Criminology, Police, Literature and fine arts, American universities.

The officers of the committee on organization are: Honorary President, Marcial Martinez; President, Valentin Letelier; Vice-presidents, Manuel Egidio Ballesteros and Miguel Cruchaga; General Secretary, Eduardo Poirier; Treasurer, Octavio Maira.

For a copy of the "First Bulletin," issued May 28 in behalf of the Congress, those interested should address the Director of the Bureau of American Republics, Washington, D. C.

The name "Kentucky." — There appears nothing in support of the popular meaning, the "Dark and Bloody Ground," usually assigned to the name "Kentucky." From *A History of the Mississippi Valley*, by Spears and Clark (1903), it is learned that a leading Cherokee chief, Oconostota, about 1775, spoke of the Kentucky region as a "dark and bloody ground."

The first known use of the name Kentucky is under the form "Cantucky" in a deposition of Alexander Maginty before William Allen, chief justice of Pennsylvania, October 12, 1753 (*Colonial Records of Pennsylvania*, v, 663, 1851). A portion of the deposition is as follows: "Being on their Return from Trading with the Cuttawas, a nation who live in the Territories of Carolina, were on the Twenty-Sixth Day of January last attacked and taken Prisoners by a company of Coghnawagos, or French Praying Indians, from the River Saint Lawrence, being in Number Seventy (with whom was one white man called Philip, a Low Dutchman), at a Place about Twenty-Five Miles from the Blue Lick Town, and on the South Bank of Cantucky

River, which empties itself into Allegeny River about Two Hundred Miles below the Lower Shawanese Town." But in Maginty's petition to the Pennsylvania Assembly (*Assembly Journal of Votes and Proceedings* for 1753, October 16, p. 272), the form "Kantucqui" is applied to a river which is described as a western branch of the Ohio. In Article III of the Treaty of Greenville, 1795, the river is described as the "Cuttawa or Kentucky"; on Hutchins' Map, 1778, and in Morse's *Gazetteer of North America*, 1798, the Kentucky river "is sometimes called Cuttawa" (p. 260). This river appears on the Walpole Grant of Vandalia, 1773, as the "Louisa Catawba, or Cuttawa." But in the *Journal of Christopher Gist* the name "Great Cuttawa River" evidently means the Cherokee river, now the Tennessee; and Hendrick Aupaumut in his interesting Narrative in *Memoirs of the Historical Society of Pennsylvania* (II, 1827), mentions the fact that in 1791 "three of Kuttoohwauw Nation or Cherekes arrived at the Forks" or Auglaize on the Miami river, and on page 128 of the same publication he writes "Kuttoohwoh, or Cherekes."

Several years ago I reached the conclusion that the term "Kentucky" was derived from the Choctaw *kantak*, or a close cognate thereof (with the suffix of the absolute case *-i*), signifying "china brier, or china-root" (*Smilax pseudo-china*), from the roots of which the Indians made bread, a jelly, and hot cakes or fritters. William Bartram, in his *Travels* (p. 239, 1792), describes the Indian method of preparing this tuber for food. He writes: "They chop the roots in pieces, which are afterwards well pounded in a wooden mortar, then being mixed with clean water, in a tray or trough, they strain it through baskets; the sediment, which settles to the bottom of the second vessel, is afterwards dried in the open air, and is then a very fine reddish flour or meal; a small quantity of this mixed with warm water and sweetened with honey, when cool, becomes a beautiful, delicious jelly, very nourishing and wholesome. They also mix it with fine corn flour, which being fried in fresh bear's oil makes very good hot cakes or fritters."

John Filson (*Description, Settlement and Present State of Kentucky*, 1784, in Imlay's *Topographical Description of the Western Territory of North America*, 1793) says that in 1767 John Finley and some others "fortunately travelled over the fertile region, *now* called Kentucky, *then* but known to the Indians, by the name of the Dark and Bloody Ground, and sometimes the Middle Ground." But on Evans' *Map of the Middle British Colonies in America*, edition of 1755, the legend "Kentucke river," is found, showing, with Maginty's deposition cited above, its early use.

From the Memorandum Book of Colonel William Preston, cited by Speed in *Filson Club Publications*, No. 2, 1886, it is learned that the Miami Indian name for the Kentucky river was *Milewakemecepewe*, but no definition of it is given. John Johnston, United States Agent of Indian Affairs at Piqua, Ohio, in a letter to Caleb Atwater, June 17, 1819, wrote that "Kentucky is a Shawnoese word, and signifies, at the head of a River," but without an analysis. In so far as mere approximation of sounds and a general applicability to the situation may warrant, there appears no great difficulty in deriving "Kentucky" from the common Iroquois *Kentake* or *Kentakekowa*, "On the meadow," and "On the large meadow," but in the lack of historical evidence directly connecting the two terms only a possible relation may be assumed. But, conversely, there are certain considerations which render improbable the identification of "Kentucky" with the Iroquois terms cited above. First, the name was apparently quite unknown to the French writers and explorers previous to the middle of the 18th century. LaSalle and Gallinée (1669) and Celoron (1749) who explored the Ohio river and some of its northern affluents and who were also well acquainted with the Iroquois tribes, did not, so far as the writer can learn, obtain a name applied by the Iroquois to what was afterward known as "Kentucky." It seems incredible that the French would have remained ignorant of the name had the Iroquois been in the habit of applying their own term *Kentake*, or *Kentakekowa*, to the region in which the French were then vitally interested, although the Iroquois were evidently at that period quite familiar with this region, for at the time of the visit of LaSalle and Gallinée to them they had many Shawnee prisoners. Second, in the deed of the lands on the Kentucky river to Henderson, made in 1775 by the Cherokee, one of the landmarks is therein described as "the mouth of Kentucky, Chenoca, or what by the English is called Louisa river," thus showing that the name Kentucky had not as yet become the common name of that river. Moreover, Chenoca, or Chenoa as it is sometimes written, was the Cherokee name of the region on the river commonly called Kentucky, and is derived from the Cherokee vocable denoting "cedar," and as a locative signifying "at the cedar place," or "at the cedar country." This derivation is confirmed by the line "To wild Kentucky's *cedar*-shadowed waves," employed by Daniel Bryan in recounting the adventures of Daniel Boone, in the *Mountain Muse*, 1813. Specifically, the name Chenoca appears to have been applied to "all the land south of Kentucky to the Cumberland river" (Smith, *History of Kentucky*, 1892).

The expression, "The Dark and Bloody Ground," applied, as a conjectured translation of the term "Kentucky," to the region along the river of this name, has no known relation to the latter word. The following facts suggest the true derivation of the expression first cited above. From Felix Walker's narrative of his trip with Daniel Boone in 1775 (*DeBow's Review*, Feb. 1854), the following is learned of Walker and his companion; namely, that they proceeded to Watauga river, a tributary of the Holston, to the residence of Col. Charles Robertson, "where a treaty was held by Colonel Richard Henderson and his associates, with the Cherokee tribe of Indians, for the purchase" of the country "then called the Bloody Ground, so named from the continual wars and quarrels of the hunting parties of Indians of different tribes who all claimed the ground as their own" (p. 161); that the Dragging Canoe, one of the Over-hill Cherokee chiefs, said at this treaty that there was "a dark cloud" over the country sold, declaring that though he would vouch that the Cherokee would not injure Henderson and his people, he feared the hostility of "the Northern Indians," meaning probably the Iroquois, the Illinois, or the Shawnee and their neighbors; that the distinguished Cherokee chief "Atticulaculla," then about 90 years of age, "a very small man, and so lean and light-habited, that I scarcely believe he would have exceeded more in weight than a pound for each year of his life," confidently asserted that he could vindicate the "rightful claims of his people to the Bloody Ground, then in treaty to be sold to the white people."

The deposition of one Sam Wilson (*Calendar of Virginia State Papers*, 1, 292) in the case of Virginia *vs.* Henderson shows that at the Watauga treaty in 1775 there was bitter opposition by the Cherokee to the inclusion of so much land in the demands of the Transylvania Company, and that Dragging Canoe delivered an address in which, stamping his foot violently on the earth, he exclaimed, "This is *Bloody Ground*," and then pausing and "pointing his finger ominously to the northwest," significantly added, "and *Dark* and *Difficult* to *Settle!*" The foregoing data from the deposition of Wilson and from the narrative of Walker supply presumptive evidence that the phrase "Dark and Bloody Ground" is apparently not a translation of the name "Kentucky," but is rather a brief embodiment of well-known epithets frequently applied to that country by the Cherokee at the Watauga treaty and earlier.

J. N. B. Hewitt.

Ancient Works on the Muskingum. — In Volume I, No. 9, of *The Columbian Magazine*, published in Philadelphia in May 1787, appeared

an article by Capt. Jonathan Heart entitled "Description and Plan of some Remains of Ancient Works on the Muskingum." This article, which does not appear to have been known to many of the later writers on the subject, has now become quite scarce. Moreover, it is thought to have been the first description and plan of an American earthwork ever published, for which reason, added to its scarcity, it is deemed worthy of being reprinted at the present time.

The plan (pl. XVII) is an exact reproduction of the plate in *The Columbian Magazine*, with the exception that beneath the last four words of the inscription occurs the legend: "By Jon^{a}. Heart Capt^{n}. 1st. Amer^{n}. Reg^{t}.." The description follows:

Account of some Remains of ancient Works, on the Muskingum, with a Plan of these Works. By J. HEART, *Capt. in the first American regiment.*

The inclosed is a plan of the remains of some ancient works, situate on the east side of the Muskingum, at about half a mile from its junction with the river Ohio. They consist of No. 1. which, for distinction's sake, we call the town. No. 2. the fortification, and No. 3. the pyramid, and some detached works.

The town is about one quarter of a mile square, surrounded with a line of walls of earth, from six to ten feet high, and from twenty to forty feet thick, the walls on each side are divided into four nearly equal parts, by three openings in each, directly oposite to each other, and openings also at each angle of the town; the openings in the center of the walls are the largest, particularly that on the side next to the Muskingum, from which opening a covered way, 120 feet wide, leads by a gradual descent 120 yards to the low grounds, where it is probable the Muskingum then run — this covered way is guarded on each side with walls, commencing at 20 yards distance from the walls of the town, and gradually become more elevated as the covert way descends, and near their termination towards the Muskingum are 30 feet high, being nearly on a plane with the walls of the town; the covert way is sloping from the center towards the walls, like the pavement of a street, as tho' there might have been canals all joining the walls, to carry the water from the town — at the north-west corner of the town is an oblong mount, 74 by 44 yards square, and six feet high, the top a perfect plane, a regular ascent leads to the top of it, at the center of each side, directly opposite each other, and in a line with the opposite openings in the walls of the opposite sides of the town — near the south-wall of the town is a similar mount, 50 by 40 yards square, with this difference only, that instead of an ascent to go up, on the side next the wall of the town, is a hollow way 10 feet wide, leading 20 feet towards the center of the mount, and then a gradual ascent to the plane of the top — a little back is a small circular mount, with four small caves at equal distances and opposite each other—at the south-east corner is also an oblong mount, 36 by 18

yards, but less conspicuous — at the south-west corner is a semi-circular parapet, guarding the opening with a circular mount on the parapet, opposite the angle of the town.

No. 2. The fortifications are also nearly square, with openings only in the center of the opposite walls, and at the four angles, each opening is guarded with a circular mount 10 feet high, the openings on the east and west sides of the fortifications have two of those mounts back of each other — between the town and fortifications are some large caves, [1] mounts, graves, &c.

No. 3. The pyramid is a circular mount, a little oval, 50 feet high, 390 in circumference, surrounded with a ditch 5 feet deep, and 15 wide, a parapet outwards, 759 feet in circumference, an opening in the parapet towards the fortifications. There are other wall, mounts and caves less conspicuous, and perhaps independent of those particularly mentioned, [which] might be considered as works of nature, but in connection with other parts are proof of art and design. The trees growing on the pyramid and different parts of the works are large, in some instances there are white oak trees of near four feet diameter, growing from a rise of earth, evidently made by the decay of a more antient growth — the soil as well as the timber are the same in appearance in every part of the works, as in the common wilderness — The graves mentioned between the town and fortifications are small mounts of earth, from some of which human bones have been taken — in one were found bones in the natural position of a man, buried nearly east and west, and a quantity of ising-glass [2] on his breast — in the other graves the bones were irregular, some calcined by fire, others only burnt to a certain degree, as to render them more durable ; in others the mouldered bones retained their shape without any substance, others were partly rotten, and partly the remains of decayed bones — in most of the graves were found stones evidently burnt, pieces of charcoal, Indian arrows, and pieces of earthen ware, which appear to be a composition of shells and a cement.

Nothing is yet found which can lead to a discovery, when, or by whom those works were constructed, or the design of the different parts ; the accounts of the Indians are irregular and inconsistent, and carry more fable than appearance of tradition — but the uniform regularity, and prodigious extent of the works, as well as their former height (if we may calculate from their present appearance, and their probable antiquity) are convincing proofs that they

[1] This and the subsequent references to *caves* probably refer to caches used by the Indians for the storage and preservation of grain, skins, etc. If this supposition is correct it is evidence of the site having recently been occupied. But the tribe by which the site was occupied need not necessarily have had any connection with the builders of the works. — B.

[2] Sheets of "ising-glass," or mica, have been found throughout the Ohio valley, in contact with burials. Often they evidently served as mirrors, while again pieces were cut into various designs or perforated and used as ornaments. This, however, is probably the earliest reference to mica having been discovered in graves. — B.

Plan of the Remains of some Ancien

Ancient Works on the Muskingum.

were constructed by a people not only numerous, but well acquainted with the art of fortification and defence, and added a beautiful uniformity to usefulness in the construction of every part.

Explanation of the Plate.

No. 1. The town *b*, *g*, *h*, mounts of earth *i*, *i*, *i*, &c., ascents leading to the top of the mounts, *r*, a hollow way, leading also to the top of the mount, *l*, a circular mount with four caves, *m*, a semicircular parapet, with a circular mount at *m*, *p*, a covered way 120 feet wide, 120 yards long, with walls 30 feet high at *o*, *o–n*, a covered way.

No. 2. The fortifications.

No. 3. The pyramid, *a*, the parapet and ditch 759 feet in circumference, 5 feet deep, and 15 feet wide, with an opening at *r*, — *b*, a circular mount 50 feet high, and 390 feet in circumferenee ; *c*, a semicircular redoubt, *d*, a ditch and parapet.

The area occupied by this group of works later became the site of the town of Marietta, Washington county, Ohio, and through subsequent writers they became known as "the Marietta works."

A map of the area, drawn from a survey made by Charles Whittlesey in 1837, was reproduced as plate XXVI by Squier and Davis, in *Ancient Monuments of the Mississippi Valley*, 1847, while a general view of the works, from the northeast, appears as the frontispiece to the same volume. The more important differences between the two maps may be briefly stated.

In the Whittlesey survey a rectangular mound is shown in the northern angle of the larger enclosure (Heart's No. 1), which does not appear on Heart's map. But on Whittlesey's map the two crescent-shaped embankments represented on Heart's map as *d*, southeast of the large mound, are not shown, nor are the graves that occurred between the two enclosures.

A bibliography of "the Marietta works" may be found in the *Catalogue of Prehistoric Works*, by Dr Cyrus Thomas, Washington, 1891, p. 188. DAVID I. BUSHNELL, JR.

An Interesting Kentucky Pipe and a Unique English Medal of the Cromwellian Period. — The United States National Museum possesses what is probably the most interesting "great pipe" ever found in America. Two photographic views of it are here given (fig. 90), and also a sectional drawing of the bowl and stem perforations, showing the striæ made by the sand used in drilling (fig. 91).

The pipe is from Lexington, Kentucky, and was collected by Mr J. Peter. It is labeled "Kentucky University," but unfortunately there is no information regarding its history. It is made of steatite; it weighs five pounds and twelve ounces, stands nine inches high, is ten inches in

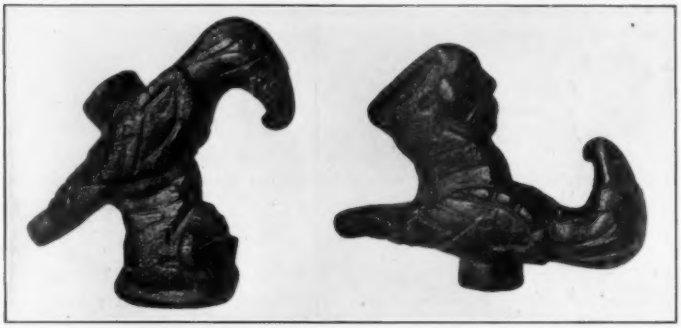


FIG. 90. — "Great pipe" of steatite from Kentucky.

greatest length, and two and a half inches thick from side to side. Among known pipes the type is unique. It represents a large bird, with strongly curved beak, standing in a natural position upon a pedestal. Inverted, the pipe exhibits the head and neck of a man. The surface is highly polished, and on it are incised lines indicating the bird's wing and tail feathers, as well as lines on the man's face which were probably intended to represent paint or tattoo marks. The eyes of both the bird and the man are also indicated by incised lines. Both the bowl of the pipe and the stem hole are elongate cone-shaped openings which intersect at a right angle to each other. The opening in the bowl becomes larger toward the mouth, which measures an inch and three-eighths in diameter, whereas the stem opening measures only three-fourths of an inch. Both perforations decrease gradually in diameter as they approach the point of intersection.

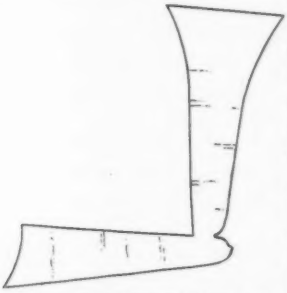


FIG. 91.—Section of the bowl and stem perforations of the "great pipe."

From the point of view of the aborigines this pipe must have been of

great importance and value. It is well known that among many of the Indian tribes there were "great pipes" that were used only on the most solemn occasions, such as the making of a treaty with the whites or with a neighboring tribe, or in other ceremonies of civil or religious importance. The giving of a "great pipe" is recorded by Rev. William M. Beauchamp,[1] who refers to such a gift from Sir William Johnson to the Iroquois in 1756. This pipe is said to have been the largest in America, and it was designed to be hung up in the council house at Onondaga, New York.

Though the pipe here described is so rudely conventional, the type is believed to indicate European influence. This belief is strengthened by the medal herein illustrated (fig. 92), which exhibits on both sides an arrangement of heads similar to that of the pipe. This medal is described in a recent publication of the British Museum.[2] The specimen owned by

FIG. 92. — Cromwellian medal of 1650.

that institution is of lead and is said to be unique, but it is of a type common at the period. The description says: "Cromwell and Fairfax Satirical Medal, 1650. A Dutch satirical medal referring to the retirement of Fairfax from the chief command of the Parliamentary forces, June 25, 1650, and to the appointment of Cromwell as Captain-General on the following day. The satirical inscriptions point out Fairfax as the dupe of Cromwell's superior cunning, and also infer that Cromwell had outwitted Fairfax by persuading him to resign the chief-generalship of the army which he himself desired and did indeed succeed to. This type is taken from the well-known satirical medal of a Pope's head with that of the Devil and a Cardinal's head with that of a fool."

[1] *Bull. 78, New York State Museum*, 1905, p. 305.

[2] *Medallic Illustrations of Great Britain and Ireland*, London, 1905.

The publication cited does not refer to the existence of such a medal in silver. The one here illustrated is of the latter metal, however. It was brought to America from England in 1792.

JOSEPH D. MCGUIRE.

The Preservation of Water-soaked Archeological Objects of Wood. — The difficulty of preserving the forms of water-soaked archeological objects of wood recovered from bogs and the muddy beds of rivers and lakes is well known to most curators. An examination of the collections from the Swiss lakes, for example, shows most of the wooden specimens shrunken to such an extent as to give but a faint idea of their original forms. In view of the serious loss to American students caused by shrinkage of the remarkable wood carvings collected by Cushing from the sites of the Key-dwellers of the gulf coast of Florida,[1] a record of the process followed by the writer in the successful preservation of a few objects of this class may be of interest.

It is of primary importance that such specimens *should not be allowed to dry before treatment.* When taken from the mud they should be cleaned under water, wrapped in wet cotton batting, and kept in water or, preferably, in water to which about 10 per cent. of alcohol has been added. For transportation they may be packed in wet cotton batting and placed in small tin cans nearly filled with the above mixture of alcohol and water, and hermetically sealed.

The purpose of subsequent treatment is to replace the water in the specimen with a non-volatile rigid substance which will prevent contraction. Hard paraffin was used for this purpose with very satisfactory results. The process of replacement is as follows:

The specimen is immersed in three or four baths of alcohol and water, the first being about 25 per cent. and the others approximately 50 per cent., 75 per cent., and 95 per cent. alcohol. It is then transferred to absolute alcohol. It should remain in each bath about two days, or longer for large objects. By this treatment the water in the wood is gradually replaced by alcohol. The specimen is now immersed in xylol (xylene), an inflammable preparation from coal-tar. After a day or two it is transferred to fresh xylol where it may remain for about the same length of time or until the xylol has wholly replaced the alcohol. The object is now suspended in melted paraffin kept hot by a boiling water bath. For specimens of medium size it usually requires four to six hours

[1] A Preliminary Report on the Exploration of Ancient Key-Dweller Remains on the Gulf Coast of Florida, *Proc. Amer. Philos. Soc.*, Phila., XXXV, no. 153.

for the paraffin to replace the xylol which is absorbed or thrown off in gas that rises to the surface in bubbles. The specimen should remain immersed for a while after the bubbles cease to rise. The paraffin may partially cool before removing the object treated, which may be dipped once or twice in the paraffin as it cools. It is essential that the quantity of each bath should be several times greater than the amount required to cover the specimen, and also that the final bath of both alcohol and of xylol be pure, otherwise enough water will remain to seriously interfere with the absorption of paraffin and the wood will shrink in proportion to the amount of water it contains. Paraffin contracts somewhat in cooling, but not enough to materially alter the form of the specimen.

The above process is practically the same as is followed in preparing biological sections. After a few days the exterior coating of paraffin may be removed with benzine applied with a flat camel's hair brush, when the surface of the wood will appear in its natural color and texture. This treatment, if carefully followed, does not injure painted surfaces. Care must be taken not to allow the specimen to soak in benzine, as too much paraffin will be dissolved.

The few experiments by the writer in restoring the forms of wooden specimens in *old* collections from the Swiss lakes have been unsuccessful, although a few recently dried objects of this class were fully restored by immersion in a 3 per cent. solution of caustic potash in water.[1] Unfortunately they shrank again when the potash solution was replaced by water or alcohol. It is hoped that further experiments along this line may prove as successful as the treatment described above of specimens freshly taken from the water.

CHARLES C. WILLOUGHBY.

PEABODY MUSEUM, HARVARD UNIVERSITY,
CAMBRIDGE, MASS.

The American Museum of Natural History will conduct anthropological researches in several fields during the summer. Mr Harlan I. Smith will continue his studies in northeastern Wyoming. Mr Smith's aim is to begin the location of fields for future detailed coöperative exploration by the museums of the country in this middle-ground of a vast neglected area for archeological exploration, extending from the Gulf to the Arctic, and including all of Nevada, Idaho, Wyoming, Montana, the greater part of Texas, Oklahoma, Kansas, Nebraska, the Dakotas, Colorado, Utah, and the British Possessions. Mr Smith has repeatedly called

[1] *American Anthropologist*, 1904, VI, 3.

attention to the fact that from this region there is little archeological material, and regarding it hardly any archeological literature, although it is larger than the remaining part of North America. The summer's work may extend a short distance into Dakota or Montana, if not into both. Dr R. H. Lowie left New York in May for the Mackenzie River region north of Lake Athabasca, where he will begin anthropological studies among the Athabascan tribes, and during the latter part of the season he will continue work already begun among the Northern Plains Indians of the United States. Mr Alanson Skinner will collect anthropological data and specimens in the James Bay region of Canada, and particularly among the Indian tribes of Labrador. Mr Gilbert L. Wilson takes up anthropological work among the Mandan and Hidatsa Indians of North Dakota. Dr J. R. Walker is devoting his time to the study of special points in the ethnology of the Dakota Indians, chiefly on Pine Ridge reservation, and Prof. Howard Richards is in China gathering anthropological material. Dr Hugh M. Smith, of Washington, D. C., is doing volunteer collecting of anthropological material in the Philippine islands for the Museum in connection with the biological survey of the group which has been undertaken by the United States Bureau of Fisheries. Capt. George Comer is continuing his valuable work among the Eskimo of the Hudson Bay region, whence he has already brought the Museum much important material. Mr V. Stefánsson left New York about the middle of April for an expedition down the Mackenzie river to its mouth and eastward along the coast of the Arctic ocean, for the purpose of studying the ethnology of the Eskimo tribes inhabiting the region. Dr C. C. Vinton has again taken up collecting in Korea, giving his chief attention to surviving ancient industries. Mr Herbert J. Spinden is investigating the ethnology of the Nez Percé Indians. Mr George J. Geis is gathering specimens and general ethnological data among the primitive Kachins of Upper Burma. Under the auspices of the Congo Free State, ethnological and anthropological collections are being made in various parts of the Congo basin.

John Hitz, who died suddenly in Washington, D. C., March 28, 1908, was born at Davos, Switzerland, September 14, 1828. He was the son of John and Anna (Kohler) Hitz. When three years of age he came to this country with his father's family, which settled in Washington, where he resided until his death. He received a liberal education in private schools and colleges in Maryland and Pennsylvania, and for several years was engaged in teaching. From 1864 to 1882 he was a trustee of public academic and industrial schools in Washington. In 1864 he was

appointed consul general of Switzerland in Washington, to succeed his father, and held that office for seventeen years, during which time he was largely instrumental in carrying into effect the first International Postal Order Exchange between the United States and Switzerland, and he presented plans for and urged the introduction of universal postage stamps. He also urged the utilization of the mountain streams of Switzerland for generating electric power for railways, and he was publicly credited by the engineer of the Rigi Mountain Railway, N. Riggenbach, as having originated the idea for the construction of railways of this character in that country. Mr Hitz's chief interest was always in the promotion of educational and philanthropic undertakings. He was a member of the Anthropological Society of Washington, American Association for the Advancement of Science, the National Education Association, the American National Red Cross Society, the National Geographic Society, the Society of American Florists, the Society for Philosophical Inquiry, the Swiss Benevolent Society, and other American and foreign organizations. For Red Cross work rendered in New Orleans in 1884 he was awarded a silver medal by the Empress Augusta of Germany, and in 1878 a medal was presented to him for his services as Swiss commissioner to the International Exposition in Philadelphia. He was an accomplished musician, and often took part in public musical performances. He contributed many articles of value to educational periodicals, wrote a number of social science reports, and wrote and edited many papers relating to the deaf, including an article on Miss Keller published in Volume 8, No. 2, of this journal. He was a most intimate and helpful friend of Miss Helen Keller and rendered her much aid in the preparation of her books for publication. In 1890, when Dr Alexander Graham Bell was arranging for the establishment of the Volta Bureau in Washington, designed for the especial purpose of increasing and diffusing knowledge relating to the deaf, he selected Mr Hitz as superintendent and placed him in charge of all plans for organizing the work. Mr Hitz really created the Volta Bureau and remained in charge of it until his death. He was a man of liberal education, broad culture, fine artistic taste, generous and kindly disposition, and high Christian character. He was a clear, forcible writer, and the records of his life work are extensive and valuable.

GEORGE C. MAYNARD.

Recent Exploration of Caverns in the Ozarks. — Early in May, the Department of Archeology of Phillips Academy, Andover, Massachusetts, sent an expedition to Benton and Madison counties, Arkansas, to explore

certain caverns that had been seen by Mr E. H. Jacobs, who had been sent on a preliminary trip through the White river country. Mr Jacobs reported the existence of more than thirty caverns within an area covering approximately eighty by forty miles.

Dr Charles Peabody, the director, and Mr W. K. Moorehead, the curator of the department, spent five weeks in the field. From Fayetteville, Arkansas, they examined the country southward and eastward through a region never before visited by archeologists. Four caverns were explored, one of them in limestone and the rest in sandstone. The largest, Kelley Cavern, is about seventy meters in extent, with an overhang of thirty meters, while the bluff is about fifteen meters high. The ashes in this cavern ranged from one to three meters in depth, requiring a force of from twelve to fifteen men for more than two weeks to remove them.

The character of the cave material differs essentially from that found on the surrounding village sites. Shallow metates were numerous in the ashes of the caverns, thirty-seven having been found in Kelley Cavern alone. The extreme scarcity of certain other artifacts in the region deserves mention. Only one or two grooved axes have been found; there are no celts, no slate ornaments or problematical forms, no grooved hammers, no hematite implements, none of the spades and hoes common in the East and North, and only two pipes have been discovered in the entire region; but everywhere in the fields are great quantities of chips, spawls, hammerstones, knives, and projectile points — larger numbers indeed than either Dr Peabody or Mr Moorehead ever saw in any other part of the United States. The collection brought to Andover numbers about 1200 specimens.

The country is difficult of access, most of the caverns lying twenty to thirty miles from the nearest railway. The elevation ranges from 1300 to 1600 or 1700 feet. Judging from reports brought in by mountaineers there are many caverns in this region. These will be explored by Phillips Academy from time to time, permission having been obtained from the company which controls upward of 30,000 acres of land in the cavern country.

Remarks on a Footnote to Mr R. H. Mathews' Recent Paper. — Mr R. H. Mathews asserts in his paper on Marriage and Descent in the Arranda, printed in the last issue of this magazine (page 98, note 4), that in my *Kinship and Marriage in Australia* I have copied extensively from an old map of his and not acknowledged my indebtedness. I did

not, as I shall show, need to copy from him; I did not in fact copy from him; and I did not consult his map in preparing my own. The curious, who wish for proof of this statement, may find it in the following facts:

(1) The tables in my work (pp. 41–50) give the names of more than fifty tribes, not including those of the eight-class organization; Mr Mathews in the paper referred to mentions only twenty. (2) I give the names of more than forty pairs of phratries; Mr Mathews gives but twelve. (3) My two maps show what is also given in my tables, that the boundaries of phratry and class organization are not always the same; Mr Mathews lumps phratries and classes together. These facts alone are sufficient to upset the charge against me. No one who will take the trouble to look at my third map will see much resemblance in it to that of Mr Mathews.

My maps were based on the lists of the tribes given in the tables just mentioned; and, although Mr Mathews suggests a different view, there are few tribes whose location cannot be determined from the maps of Curr (1886), Roth (1898), Spencer and Gillen (1899 and 1904), Dr Howitt (1904), and others.

Perhaps if Mr Mathews had been able to refer to these well-known authorities his map would have been more accurate. As a first attempt his map was a praiseworthy effort, though naturally lacking in detail. That the map of a later writer like myself should bear a general resemblance to his own is not unnatural; but if Mr Mathews wishes to be reputed a person of sound judgment he will refrain from making charges of plagiarism on such ludicrously insufficient grounds.

I may add that in my map II the numbers viii and ix should be reversed.

NORTHCOTE W. THOMAS.

7 COPTIC ST.,
LONDON, W.C.

School of American Archeology. — The Committee on American Archeology of the Archeological Institute of America has established a School of American Archeology with the following regulations:

I. The School of American Archeology is established to conduct the researches of the Institute in the American field and afford opportunities for field work and training to students of archeology.

II. The School will direct the expeditions of the local societies in their respective fields, maintain archeological researches in the various culture areas of the American continent, direct the work of fellows and collaborate with universities and other scientific organizations, both home and foreign, in the advancement of archeological research.

III. The School will afford to students opportunities for field experience and training. No courses will be given which duplicate class instruction offered by the universities. Students will be attached to field parties of the local societies, or to other expeditions under the direction of the School. Classes may be formed to proceed to any point where important archeological work is in progress for field sessions.

IV. The committee on American archeology, consisting of the president and secretary of the Institute and seven other members elected by the council, one each year for a term of seven years, shall be the managing committee of the School; and the director of American archeology, appointed by the committee, shall be its executive officer. The committee is authorized to maintain fellowships, archeological stations, publications, the various kinds of work herein provided for, and to raise funds for the support of the same. Its funds shall be held by the treasurer of the Institute and disbursed by him on the order of the chairman of the managing committee, approved by the president of the Institute.

The managing committee consists of the following: Miss Alice C. Fletcher, chairman; Professor Franz Boas, Mr Charles P. Bowditch, Professor Mitchell Carroll, Dr J. Walter Fewkes, Mrs John Hays Hammond, Professor Francis W. Kelsey, Dr Charles F. Lummis, and Professor F. W. Putnam.

The Colorado Society of the Archeological Institute has commenced the excavation of the Cannonball ruins, in the McElmo drainage, Montezuma county, Colorado. This work is supported jointly by the Institute's School of American Archeology, the State University of Colorado, and the Colorado State Historical Society, and will be conducted under the supervision of the Institute's director of American archeology. The School also announces excavations in Utah, beginning June 1, and in Pajarito Park, New Mexico, beginning August 15. An expedition for the study of the Maya culture in Central America will take the field about December 1. Properly qualified students will be admitted to all these expeditions. Application should be made to the director, Edgar L. Hewett, 1333 F street, N.W., Washington, D. C.

Harvard Anthropological Society. — The Harvard Anthropological Society celebrated its tenth anniversary in May. The club was founded in 1898 mainly through the initiative of the late Dr Frank Russell and Mr Walter S. Andrews. Its object "is the promotion of interest in the study of the natural history of man and of the history of human culture with special reference to its origins and primitive forms and to the general laws of its development."

The society is composed of undergraduates and graduates of Harvard University who are taking or have taken courses offered by the Department of Anthropology. The officers, with the exception of the permanent secretary, are elected from the student body. Meetings open only to members are held every month during the college year, at which time papers are presented and discussed. The society thus furnishes a means of intercourse between the older and younger men which is not possible in any other way.

During the first seven years of the history of the organization two or more public lectures were given under the auspices of the society each year. A different policy has been carried out during the last three years. Two dinners have been held annually with a special guest of honor who has delivered an address. These occasions have proved most profitable as well as enjoyable as many former members of the society have returned.

The society numbers among its honorary members Professor F. W. Putnam, Miss Alice Fletcher, Mr C. P. Bowditch, Professor Franz Boas, and Professor A. C. Haddon. Among the speakers at the meetings of the club have been, in addition to the honorary members, Professor A. M. Lythgoe, Professor George F. Moore, Professor Leo Wiener, Professor A. L. Kroeber, Professor Marshall H. Saville, Mr Stewart Culin, Professor E. H. Nichols, Dr J. M. Bell, Professor John Murdoch, Professor G. H. Chase, and Mr E. B. Drew. A. M. T.

Sir John Evans, K.C.B., F.R.S., died at his residence, Britwell, Berkhampstead, England, on May 31, in his eighty-fifth year. The son of Rev. Arthur Benoni Evans, D.D., and Anne, daughter of Captain Thomas Dickinson, R.N., he was born at Britwell Court, Bucks, November 17, 1823, and was educated at Market Bosworth School. In 1854 Evans was elected honorary secretary of the Geological Society, which position he held for twenty years. He was treasurer of the Royal Society from 1878 to 1898, and president of many learned bodies, including the Geological Society, 1874–76; Anthropological Institute, 1877–79; Society of Antiquaries, 1885–92; Institute of Chemical Industry, 1892–93; British Association for the Advancement of Science, 1897–98; Midland Institute, 1899, and Egypt Exploration Fund, 1899–1906. He was also a trustee of the British Museum; chairman of the Society of Arts, 1900–01; high sheriff of Herts, 1881; vice-chairman or chairman of the Herts County Council, 1888–1905; chairman of Herts Quarter Sessions, St Albans; chairman of the Lawes Agricultural Trust Committee; correspondent of the Institut de France, and honorary fellow of

Brasenose College, Oxford. Among his publications are: *The Coins of the Ancient Britains*, 1864, Supplement, 1890; and *The Ancient Bronze Implements of Great Britain and Ireland*, 1881. But it was by Evans' *Ancient Stone Implements of Great Britain*, 1872 (second edition, 1897), that he was best known to American students, some at least of whom regard it as the most noteworthy contribution ever made to the subject. Certain it is, this work has become a classic, appreciated no less by American archeologists than by their British confrères. Among Sir John Evans' recreations was the collection of coins and antiquities. He was knighted in 1892 and was thrice married.

John Walter Hastings was born on July 22, 1883, and died April 26, 1908, from injuries received in an accident on that day. He received the degree of A.B. from Harvard in 1905 and A.M. in 1906. In the summer of 1904 he was one of the party of students from the University who, under Dr W. C. Farabee, made a tour on horseback through the Southwest; and in the summer of 1905 he made collections for the Peabody Museum on the western coast of Iceland. In December, 1906, he was appointed ethnologist of the South American Expedition of the Peabody Museum, and accompanied the expedition in that capacity in 1907, during which period the expedition spent considerable time in the Andean plateau of Peru and Bolivia and also, after crossing the Andes at an elevation of 16,500 feet, made explorations which covered nearly two thousand miles on the rivers Madre de Dios, Beni, and Marmoré, and their head waters. In September, 1907, Mr Hastings resigned, and returning to this country, occupied himself with literary work. He was a member of the American Anthropological Association, the Society of the Cincinnati, the American Association for the Advancement of Science, the Harvard Travellers Club, and the Harvard Club of New York.

LOUIS J. DE MILHAU.

Corrections Concerning California Indians. — Owing to my absence in California when my article on The Distribution and Classification of the Mewan Stock of California[1] was passing through the press I did not see the proof, and as a consequence several typographic errors crept in. Three of these are of sufficient importance to need correction.

On page 344, line 18, for "*Ko'-ne-u-kon'-ne*" read "*Ko'-ne* or *Kon'-ne*."

On page 353, line 8 from bottom, for "*Tso'-kew po-goot*" read "*Tso-ke-yo-me po-goot*," and add "*Al-lō'k-yo-me po-goot*" as an addi-

[1] *American Anthropologist*, vol. 9, no. 2, pp. 338–357, April–June, 1907.

tional rancheria in Pope valley. On line 13 of the same page add "*Lahl-mok-po-goot*," there having been two rancherias in Middletown valley. This brings the number of villages of the *Tuleyome* up to fifteen.

On page 357, line 4, for "There is *no* doubt," read "There is doubt" — the meaning being completely reversed.

In a report of a meeting of the Anthropological Society of Washington published in the same volume (page 388, line 26), I am made to say that certain songs were sung at intervals *of* eight days. My statement was that they were sung at intervals *for* eight days.

C. HART MERRIAM.

Philippine Arrow Poisons. — Mr Raymond F. Bacon (*Philippine Journal of Science*, III, no. 1, Feb. 1905) has conducted a series of experiments on Philippine arrow poisons and has found that the sap of *Antiaris toxicaria* Lichen., identical with the Upas tree of Java, is used on blowgun arrows by the Tagbanua of San Antonio bay, near the southern end of Palawan. The tribes of the northern part of Mindoro near Bulalacao extract the sap from this tree for poisoning arrows. Other animal poisons are prepared from fermented pineapple leaves, from *Sunasia Amori* Blanco, *Lophopetalum toxicum* Loher, and from *Strophanthus Cumingii* D.C., but these have not yet been investigated. The Negritos of Bataan province are said to use the bark and sap of two trees, one of which is *Diospyrus canomoi*, and the other a tree called bicag; but the former is only moderately toxic and the latter has not been identified. Mr Bacon has shown that 0.001 of a gram of the antiaris arrow poison will kill 500 grams of animal in 30 minutes, so that one of the Tagbanua blowgun darts bears enough poison to kill from 100 to 250 kilograms of animal in one hour. There is no recovery from the antiaris poison.

WALTER HOUGH.

Preservation of Mesa Verde Cliff Ruins. — In compliance with a request of the Secretary of the Interior, Dr J. Walter Fewkes, of the Bureau of American Ethnology, has gone to the Mesa Verde National Park, in Colorado, to take charge of the excavation and preservation of the cliff-dwellings there. His work for the present will be directed toward the so-called Spruce Tree House, which he will restore, before attempting the preservation of the Cliff Palace. The Cliff Palace is not only the finest but also the largest example of cliff-house architecture in our Southwest. In the Cliff Palace, Dr Fewkes plans to excavate all the rooms and plazas to their floors, remove accumulated débris, repair the walls that are

in danger of falling, and put the ruin in such condition that a visitor may walk through the courts and rooms without obstruction. Dr Fewkes has gone to the Mesa Verde Park from the Casa Grande ruin, Pinal county, Arizona, where he has been at work during the winter season unearthing the remains of an extensive prehistoric settlement.

Cornplanter Medal. — The third Cornplanter Medal for Iroquois Research was awarded February 18th last by the Cayuga County Historical Society of Auburn, New York, to Dr David Boyle, of Toronto. The Cornplanter Medal is the only permanently endowed medal for ethnological investigation in America, and is given biennially to one of four classes of workers — ethnologists, historians, artists, and philanthropists. The first strike of the medal was awarded to Gen. John S. Clark, one of the foremost students of the history of the Iroquois. The second was awarded to Rev. William M. Beauchamp, whose contributions to Iroquois ethnology and archeology are well known. The medal is now given to Dr Boyle in recognition of his ethnological and archeological researches of the Canadian Iroquois, the results of which have been published largely in the *Annual Archæological Reports* to the Minister of Education of Canada.

Dr Hamilton Rice, of Boston, who has returned from an eighteen months' trip to the headwaters of the Rio Negro, in Colombia, has given to the Peabody Museum of Harvard University a valuable collection of ethnological material which he obtained from the natives of the region around the upper Uaupes river. The collection includes dance costumes, feather headdresses, rattles, whistles, drums, and other paraphernalia used in their dances and ceremonies, blowguns with poisoned arrows, ordinary bows and arrows, ceremonial staffs used for carrying the heads of the enemy, and various household objects such as wooden seats, hammocks, baskets, etc.

THE preliminary program of the Sixteenth International Congress of Americanists to be held at Vienna, September 9 to 14, has been issued by the committee of organization, of which Herrn Regierungsrat Franz Heger (I. Burgring 7, Vienna) is the general secretary. A number of American students have already submitted the titles of papers. Dr Franz Boas has been appointed official delegate to the Congress to represent the Smithsonian Institution, and at the suggestion of the Institution the following have been named as delegates on the part of the United States Government: Professor Franz Boas, Professor Marshall H. Saville, Dr George Grant MacCurdy, Dr Charles Peabody, and Dr Paul Haupt.

THE Athens correspondent of the London *Times* reports that two archeological discoveries of considerable importance have been made. The excavations carried out in the Altis or sacred precincts of Olympia, near the great altar of Zeus, under the superintendence of Professor Dörpfeld, have resulted in the discovery of interesting remains of the Neolithic period, including house-vessels and implements. Thus it is evident that Olympia was a place of human habitation more than two thousand years before Christ. In Sparta the members of the British School have brought to light a large number of interesting terra-cotta figurines of the fifth century B. C.

THE *Journal of the American Medical Association* quotes an announcement to the effect that the German authorities have organized a central institute at Hamburg to train officials for the German colonies and protectorates, and to centralize all the scientific and economic efforts on behalf of the colonies. In order to keep the institution in close touch with commercial interests, three members of the chamber of commerce are delegated to act as an advisory board in all questions that may arise, and as the intermediary between the institute and the senate commission. Among the chairs to be organized will be one devoted to ethnology.

THE Société d'Anthropologie de Paris has divided the Godard prize equally between Dr Rivet for his contributions to the ethnology of Ecuador, and Mr R. H. Mathews for his studies of the Australian aborigines, and has awarded a medal to Lieutenant Luis Desplagnes for his work *Le Plateau central nigérien*. The Society has awarded its Bertillon prize to Dr Langlet, director of the École de Médecine of Reims, for his noteworthy work published at Reims in 1905 under the title *La population de Vitry-le-François et son arondissement*.

PROFESSOR MARSHALL H. SAVILLE has departed for Ecuador where he will devote part of the summer in continuation of his archeological work for the George G. Heye Expedition. Dr S. A. Barrett is on his way to the same field, where for the next year he will conduct ethnological investigations among the little-known tribes included within the southern limits of the region which the Heye Expedition proposes eventually to cover.

IT IS a pleasure to announce that Anthropology has gained another step in the University of Minnesota at Minneapolis, the name of the department having been changed from Department of Sociology to Department of Sociology and Anthropology. Professor Samuel G. Smith has been selected to take charge of sociology, with Professor Samuel N.

Reep as assistant in elementary sociology, thus permitting Dr Albert Ernest Jenks to devote his entire time to instruction in anthropology.

THE Martin White studentship of £100, at London University, lately vacated by Mr Gerald Camden Wheeler, B.A., has been extended to him for a further period of one year, in order to enable him to accompany Dr Rivers to the Solomon islands for the purpose of investigating the sociology of a mother-right community. This extension was rendered possible by the generosity of Mr Martin White in offering to provide a further sum of £100 for the purpose.

PROFESSOR A. L. KROEBER, of the University of California, has returned from an ethnological visit to the Mohave Indians of Arizona and California. His investigations continued previous studies of the mythology, rituals, and music of the tribe. A survey of nearly three hundred shellmounds on the northern shores of San Francisco bay has recently been completed by the department of anthropology of the University.

BY proclamation of the President (April 16) under the authority of section 2 of an Act for the Preservation of American Antiquities, approved June 8, 1906, the following have been established as national monuments: Chaco Cañon, New Mexico (extensive prehistoric ruins); Gila Cliff Dwellings, New Mexico; Montezuma Castle, Arizona; Tonto, Arizona (ruins of cliff-dwellings).

DR EDWARD ANTHONY SPITZKA, professor of general anatomy at Jefferson Medical College, Philadelphia, and a member of the American Anthropological Association, has been elected a member of the American Philosophical Society.

THE German emperor has presented Professor Dörpfeld, head of the German Archeological Institute at Athens, with a sum of $1,000 for the purpose of commencing excavations on the site of the ancient Pylos.

THE Second International Archeological Congress will hold its meeting at Cairo, Egypt, at the Latin Easter, in 1909. The congress will be opened under the presidency of the Khedive.

WE regret to record the death, on July 2, of Joel Chandler Harris, of Atlanta, Georgia, celebrated as the author of the "Uncle Remus" stories.

THE Harvard Corporation has confirmed the appointment of Herbert Joseph Spinden as Austin teaching fellow in anthropology for the ensuing year.

MR C. H. READ, keeper of British and medieval antiquities in the British Museum, has been elected president of the Society of Antiquaries.